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Water Resources Data for North Dakota
Water Year 1980

(U.S.) Geological Survey
Bismarck, ND

May 81

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PB82-129495

Water Resources Data for North Dakota

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT ND-80-1

WATER YEAR 1980

Prepared in cooperation with the State of North Dakota
and with other agencies

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U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA 22161

CALENDAR FOR WATER YEAR 1980

1979

OCTOBER

S	M	T	W	T	F	S
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1980

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U.S. DEPARTMENT OF THE INTERIOR
March 3, 1849

Water Resources Data for North Dakota

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT ND-80-1

WATER YEAR 1980

Prepared in cooperation with the State of North Dakota
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

Doyle G. Frederick, Acting Director

For information on the water program in North Dakota write to
District Chief, Water Resources Division
U.S. Geological Survey
821 East Interstate Avenue
Bismarck, North Dakota 58501

1981

PREFACE

This report was prepared by personnel of the North Dakota District of the Water Resources Division of the U.S. Geological Survey under the supervision of L. Grady Moore, District Chief, and Alfred Clebsch, Jr., Regional Hydrologist, Central Region. It was done in cooperation with the State of North Dakota and with other agencies.

This report is one of a series issued State by State under the general direction of Philip Cohen, Chief Hydrologist, U.S. Geological Survey, and Robert J. Dingman, Assistant Chief Hydrologist for Scientific Publications and Data Management.

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CONTENTS

Page

Preface.. III
List of gaging stations, in downstream order, for which records are published.................................... VII
Introduction... 1
Cooperation.. 2
Acknowledgment... 3
Hydrologic conditions...................................... 3
Definition of terms.. 3
Downstream order and station numbers....................... 16
Numbering system for wells and miscellaneous sites......... 17
Special networks and programs.............................. 19
Explanation of stage and water-discharge records........... 19
  Collection and computation of data....................... 19
  Accuracy of field data and computed results.............. 24
  Other data available..................................... 25
  Records of discharge collected by agencies other than the Geological Survey.................................. 25
Explanation of water-quality records....................... 25
  Collection and examination of data....................... 25
  Water analysis... 25
  Water temperature.. 26
  Sediment... 27
  Parameter codes.. 27
Explanation of ground-water level records.................. 28
  Collection of the data................................... 28
Publications on techniques of water-resources investigations.. 29
Gaging station records..................................... 34
Discharge at miscellaneous sites........................... 642
Analyses of samples collected at partial-record water-quality lake stations.............................. 646
  partial-record surface-water quality sites............... 693
Analyses of samples collected at miscellaneous surface-water quality sites............................. 741
  miscellaneous temperature measurements and field determinations.. 762
Ground-water records....................................... 772
  Ground-water level records............................... 772
  Quality of ground-water records.......................... 783
Index.. 799

ILLUSTRATIONS

Page

Figure 1. System for numbering wells and miscellaneous sites (latitude and longitude)............. 18

2. System for numbering wells and miscellaneous sites (township and range)................. 18

3. Runoff during 1980 water year compared with median runoff for period 1941-70 for two representative gaging stations............. 30

4. Map showing location of lake and stream gaging stations........................... 31

5. Map showing location of water-quality stations................................. 32

6. Map showing location of ground-water observation wells......................... 33

GAGING STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

[Letter after station name designates type of data:
(d) discharge, (c) chemical, (b) biological,
(m) microbiological, (t) water temperature, (s) sediment]

Page

HUDSON BAY BASIN

Lake Winnipeg (Head of Nelson River)

RED RIVER OF THE NORTH BASIN

Otter Tail River (head of Red River of the North):

- Bois de Sioux River near White Rock, SD (d)..... 34
- Red River of the North at Wahpeton (d)............ 35
- Red River of the North at Hickson (dcts).......... 36
- Wild Rice River near Rutland (d)................ 41
- Wild Rice River near Abercrombie (dcts)......... 42
- Red River of the North at Fargo (d)............... 46
- Red River of the North below Fargo (ct)........... 47
- Sheyenne River above Harvey (dc)................ 50
- Sheyenne River near Warwick (d)................. 53

Devils Lake:

- Mauvais Coulee (head of Big Coulee) near Cando (dc)............................... 54
- Edmore Coulee near Edmore (dc)............ 56
- Webster Coulee at Webster (dc)............ 58
- Starkweather Coulee near Webster (dc)..... 60
- Little Coulee near Brinsmade (dct)........ 62
- Big Coulee near Churchs Ferry (d)........... 65
- Devils Lake near Devils Lake (d).............. 66
- Sheyenne River near Cooperstown (dcmt).......... 67

Lake Ashtabula:

- Baldhill Creek near Dazey (dcm)............... 74
- Lake Ashtabula at Baldhill Dam (d).............. 79
- Sheyenne River below Baldhill Dam (dcm)......... 80
- Sheyenne River at Valley City (d).............. 85
- Sheyenne River at Lisbon (dct)................. 86
- Sheyenne River near Kindred (dcbmts)............ 90
- Sheyenne River near Horace (d)................. 99
- Sheyenne River at West Fargo (d)............... 100
- Maple River near Hope (d).................... 101
- Maple River near Enderlin (dc)................ 102
- Rush River at Amenia (d)..................... 105
- Red River of the North at Halstad, MN (dcbmts).... 106

Goose River:

- Beaver Creek near Finley (dcms)............... 115
- Goose River at Hillsboro (d).................... 119
- Red River of the North at Grand Forks (d)......... 120
- Turtle River at Manvel (d)................... 121

HUDSON BAY BASIN--Continued

Page

Lake Winnipeg (head of Nelson River)--Continued

RED RIVER OF THE NORTH BASIN--Continued

- Forest River:
  - Middle Branch Forest River near Whitman (d)... 122
- Forest River near Fordville (d)................. 123
- Forest River at Minto (dc)...................... 124
- South Branch Park River (head of Park River):
- Homme Lake near Park River (d).................. 126
- South Branch Park River below Homme Dam (d)..... 127
  - Middle Branch Park River near Union (d)....... 128
- South Branch Park River (head of Park River):
  - North Branch Park River:
    - Cart Creek at Mountain (d).................. 129
- Park River at Grafton (d)....................... 130
- Red River of the North at Drayton (d)............ 131
- Pembina County drain 20 near Glasston (d)....... 132
- Pembina River:
  - Hidden Island Coulee near Hansboro (d)........ 133
  - Cypress Creek near Sarles (d)................. 134
  - Snowflake Creek near Snowflake, Manitoba (d).. 135
  - Mowbray Creek near Mowbray, Manitoba (d)...... 136
- Pembina River near Windygates, Manitoba (d)..... 137
  - Little South Pembina River near Walhalla (d)............................ 138
- Pembina River at Walhalla (dcbmts).............. 139
- Pembina River at Neche (d)...................... 154
  - Tongue River at Akra (d)...................... 155
- Red River of the North at Emerson, Manitoba (dcbmts)..................................... 156
- Assiniboine River:
  - Souris (Mouse) River:
    - Long Creek at Western Crossing of International Boundary, Saskatchewan (d).... 165
    - Long Creek near Noonan (d)................. 166
      - West Branch Short Creek near Columbus (dcbms)............................ 167
      - East Branch Short Creek Reservoir near Columbus (d)......................... 172
    - Short Creek below International boundary, near Roche Percee, Saskatchewan (d)... 173
  - Souris (Mouse) River near Sherwood (dcmts).... 174
  - Lake Darling near Foxholm (d)................. 181
  - Souris (Mouse) River near Foxholm (dcbmts).... 182
    - Des Lacs River at Foxholm (dc).............. 198
  - Souris (Mouse) River above Minot (d).......... 201
  - Souris (Mouse) River near Verendrye (dcts).... 202
    - Wintering River near Karlsruhe (dcs)........ 207

Page

HUDSON BAY BASIN--Continued

Lake Winnipeg (head of Nelson River)--Continued

RED RIVER OF THE NORTH BASIN--Continued

Souris (Mouse) River near Bantry (d).......... 210

Willow Creek:

Lake Metigoshe (head of Oak Creek) near Bottineau (d)........................ 211
Oak Creek at Lake Metigoshe Outlet near Bottineau (d)........................ 212
Willow Creek near Willow City (dc).......... 213
Deep River near Upham (d).................. 215

Cut Bank Creek:

Egg Creek near Granville (dc)........... 216
Cut Bank Creek at North Lake Outlet near Granville (d)........................ 218
Cut Bank Creek at Upham (dc).............. 219
Deep River below Cut Bank Creek near Upham (ct).............................. 221
Boundary Creek near Landa (d)............... 223
Souris (Mouse) River near Westhope (dcbmts)... 224

MISSOURI RIVER BASIN

Missouri River near Culbertson, MT (dcbms)............ 233
Missouri River Stage Gage No. 4 near Nohly, MT (d).... 239
Missouri River Stage Gage No. 5 at Nohly, MT (d)...... 240

YELLOWSTONE RIVER BASIN

Yellowstone River near Sidney, MT (dcmts)......... 241
Yellowstone River Stage Gage No. 1 near Fairview, MT (d)..................................... 251
Charbonneau Creek near Charbonneau (dc)........... 252
Yellowstone River Stage Gage No. 2 near Cartwright (d).............................. 254
Yellowstone River Stage Gage No. 3 near Buford (d) 255
Missouri River Stage Gage No. 5A at Buford (d)........ 256
Missouri River Stage Gage No. 6 near Buford (d)....... 257
Missouri River Stage Gage No. 7 near Trenton (d)...... 258
Missouri River Stage Gage No. 8 near Trenton (d)...... 259
Missouri River near Williston (dcms)................. 260
Missouri River Stage Gage No. 9 at Williston (d)...... 265

LITTLE MUDDY RIVER BASIN

Little Muddy River below Cow Creek near Williston (d)................................ 266

STONY CREEK BASIN

Stony Creek near Williston (dcbms)................. 267
Missouri River Stage Gage No. 11 near Williston (d)... 271

TOBACCO GARDEN CREEK BASIN

Tobacco Garden Creek near Watford City (d).......... 272

BEAVER CREEK BASIN

Beaver Creek near Ray (dcbms)...................... 273

MISSOURI RIVER BASIN--Continued

WHITE EARTH RIVER BASIN

Page

White Earth River at White Earth (dc).............. 281

BEAR DEN CREEK BASIN

Bear Den Creek near Mandaree (dcms)................ 284

SHELL CREEK BASIN

Shell Creek near Parshall (d)...................... 289

LITTLE MISSOURI RIVER BASIN

Little Missouri River at Marmarth (d).............. 290
Deep Creek near Amidon (dcbms)..................... 291

LITTLE MISSOURI RIVER BASIN--Continued

Duck Creek near Wibaux, MT (d)..................... 300
Beaver Creek at Wibaux, MT (dcs)................... 301
Hay Creek No. 2 near Wibaux, MT (d)................ 305
Hay Creek near Wibaux, MT (dcs).................... 306
Little Beaver Creek near Wibaux, MT (dcs).......... 308
Beaver Creek near Trotters (dcbms)................. 310
Little Missouri River near Watford City (dcbmts).... 320
Lake Sakakawea near Riverdale (d).................. 328
Missouri River at Garrison Dam (dcbmt)............. 329
Missouri River above Stanton (d)................... 338

KNIFE RIVER BASIN

Knife River at Manning (dcbms)..................... 339

HEART RIVER BASIN

Stray Creek near Manning (dcbms)................... 349

KNIFE RIVER BASIN

Knife River at Marshall (dcbms).................... 354
Elm Creek near Golden Valley (dc).................. 364
Knife River near Golden Valley (d)................. 366
Coyote Creek near Zap (dcbms)...................... 367
Brush Creek near Beulah (dcbms).................... 376
Spring Creek below Lake Ilo at Dunn Center (dcbms) 385
Spring Creek near Halliday (dcbms)................. 395
Spring Creek at Zap (dcs).......................... 405
West Branch Otter Creek near Beulah (d)............ 410
Knife River at Hazen (dcbmts)...................... 411
Antelope Creek above Hazen (dcbms)................. 422
West Branch Antelope Creek No. 5 near Zap (dcs). 427
West Branch Antelope Creek No. 4 near Zap (dcs). 429
West Branch Antelope Creek No. 2 near Beulah (dcs)................................ 433
West Branch Antelope Creek near Hazen (dcbms)... 435
Coal Creek near Stanton (dcbms).................... 439
Missouri River near Stanton (d).................... 444

ALDERIN CREEK BASIN

Alderin Creek near Fort Clark (dcbms).............. 445
Missouri River Tributary No. 2 near Hensler (dcbms). 452
Missouri River near Hensler (d).................... 457

MISSOURI RIVER BASIN--Continued

Page

COAL LAKE COULEE BASIN

Coal Lake Coulee near Hensler (dcbms)............... 458

BUFFALO CREEK BASIN

Buffalo Creek near Washburn (dcbms)................. 462
Missouri River at Washburn (d)....................... 469

PAINTED WOODS CREEK BASIN

Painted Woods Creek near Wilton (d)................. 470
Missouri River at Price (d)........................... 471

SQUARE BUTTE CREEK BASIN

Square Butte Creek near Hannover (dcbms)............ 472
Square Butte Creek above Nelson Lake near Center (dcbms)................................ 477
Hagel Creek near Center (dcbms)..................... 489
Square Butte Creek below Center (d)................. 494

BURNT CREEK BASIN

Burnt Creek near Bismarck (d)....................... 495
Missouri River at Bismarck (dcbms).................. 496

HEART RIVER BASIN

Norwegian Creek near Belfield (dcbms).............. 504
South Branch Heart River near South Heart (dcbms). 508
North Creek near South Heart (dcbms).............. 512
Heart River near South Heart (dcbms)................ 516
Edward Arthur Patterson Lake near Dickinson (d)..... 526
Green River near New Hradec (dcbms)............... 527
Green River Tributary near New Hradec (dc)...... 537
Heart River near Richardton (d)..................... 539
Lake Tschida near Glen Ullin (d).................... 540
Heart River near Lark (d)........................... 541
Sweetbriar Reservoir near Judson (d).............. 542
Heart River near Mandan (dcbmts).................... 543
Missouri River below Mandan (d)...................... 554

APPLE CREEK BASIN

Apple Creek near Menoken (dcs)...................... 555
Missouri River near Schmidt (d)...................... 559

CANNONBALL RIVER BASIN

Cannonball River at New England (dcbms)............. 560
Coal Bank Creek near Havelock (dcbms)............. 570
Cannonball River at Regent (dcbms).................. 577
Cannonball River below Bentley (d).................. 587

Cedar Creek:

White Butte Fork Cedar Creek near Scranton (d).. 588
Cedar Creek near Haynes (d)....................... 589
Timber Creek near Bentley (dcbms)................... 590
Cedar Creek near Raleigh (d)...................... 600
Cannonball River at Breien (dcbmts)................. 601

BEAVER CREEK BASIN

Beaver Creek at Linton (d).......................... 612

MISSOURI RIVER BASIN--Continued

GRAND RIVER BASIN

Page

Bowman-Haley Lake near Haley (d).................... 613
North Fork Grand River at Haley (d)................. 614
Buffalo Creek Tributary near Gascoyne (dcbms)..... 615
Lake Oahe near Pierre, SD (d)........................ 622

JAMES RIVER BASIN

James River near Manfred (d)........................ 623
James River near Grace City (d)..................... 624
James River near Pingree (c)........................ 625
Jamestown Reservoir near Jamestown (d).............. 626
Pipestem Creek near Pingree (d)..................... 627
James River at Jamestown (d)........................ 628
James River at LaMoure (dcts)....................... 629
Bear Creek near Oakes (d)........................... 633
Pilot Drain at Oakes (dct).......................... 634
James River at ND-SD State Line (ct)................ 638

Elm River:

Maple River at ND-SD State line (d)............. 641

WATER RESOURCES DATA FOR NORTH DAKOTA, 1980

INTRODUCTION

Water-resources data for the 1980 water year for North Dakota consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground-water wells. This report contains discharge records for 144 gaging stations; stage only records for 22 gaging stations; stage and contents for 13 lakes and reservoirs; water quality for 87 gaging stations, 33 partial-record stations, 39 lakes, 80 wells, and water levels for 32 observation wells. Additional water data were collected at various sites not involved in the systematic data collection program and are published as miscellaneous measurements and analyses. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in North Dakota.

Records of discharge and stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled, "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, Virginia 22202.

For water years 1961 through 1970, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1970 were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1971 water year, water data for streamflow, water quality, and ground water are published in official Survey reports on a State-boundary basis. These official Survey reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report ND-80-1". These water-data reports are for sale, in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the district chief at the address given on the back of the title page or by telephoning (701) 255-4011, ext. 601.

COOPERATION

The U.S. Geological Survey and organizations of the State of North Dakota have had cooperative agreements for the systematic collection of streamflow records since 1903, for ground-water levels since 1937, and for water-quality records since 1946. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

North Dakota State Water Commission
    Vernon Fahy, Chief Engineer

North Dakota State Health Department
    Gene Christianson, Acting Administrator

Oliver County Board of Commissioners
    John Weber, Chairman

Assistance in the form of funds or services was given by other Federal agencies:

Corps of Engineers, U.S. Army
International Joint Commission, U.S. Department of State
Bureau of Land Management, U.S. Department of the Interior
Fish and Wildlife Service, U.S. Department of the Interior
Surveillance and Analysis Division, U.S. Environmental
    Protection Agency
Soil Conservation Service, U.S. Department of Agriculture
Water and Power Resources Service, U.S. Department of the Interior
Other Federal agencies of the U.S. Department of Interior
    for the development of the Missouri River basin.

Certain stations are maintained under agreement with Canada and the records are obtained and compiled in a manner equally acceptable in both countries. Most of these stations are designated as "International gaging stations."

Some records have been collected and computed by contractors in accordance with U.S. Geological Survey specifications and under Geological Survey quality control.

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HYDROLOGIC CONDITIONS

Although precipitation was below normal, streamflow was normal across most of the State and actually above normal at several stations for the first 5 months of the year. The generally dry winter resulted in very little snowmelt runoff. After an extremely dry spring, streamflow quickly dropped below normal. Below normal streamflow persisted for the remainder of the year across most of the State in spite of late summer rains. However, precipitation was excessive in the north-central part of the State and streamflow was above normal in that area as the water year ended.

Annual mean flows were well below normal at nearly all gaging stations. Monthly and annual mean discharge is compared with medians at two representative gaging stations in figure 3.

Ground-water levels generally followed the streamflow pattern--near normal the first half of the year and below normal the remainder of the year. The exception was the north-central part of the State, where ground-water levels were above normal at yearend.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting inch-pound units to International System Units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multicelled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C + 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Benthic organisms (invertebrates) are animals inhabiting the bottom of an aquatic environment. They include a number of different types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are frequently used as indicators of environmental quality because many have restricted mobility during their aquatic life phase, as well as a relatively long lifespan which allows for response to prevailing and changing water-quality conditions. Many benthic organisms inhabit specific types of environments, which if changed, results in changes in the composition of the benthic community.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll *a* and *b* are the two most common pigments in plants.

Coliform organisms are a group of bacteria used as an indicator of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determined by the immediate incubation membrane filter method.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinumcobalt scale.

Contents is the volume of water in a reservoir, lake, stream or aquifer. Contents herein is that of a reservoir and unless otherwise indicated, is computed on the basis of a level pool and does not include tank storage.

Continuing-record station is a specified site which meets one or all conditions as listed:

1. When gage-height record for a river or canal is recorded or collected by an observer on a regular basis during periods of flow. Daily discharge and/or gage-height record may be published.

2. When ground water level below land-surface datum is recorded or measured 10 or more months during the water year.

3. When chemical samples are collected daily or monthly for 10 or more months during the water year.

4. When water temperature records include observations taken once or more times daily.

5. When sediment discharge records include those periods for which sediment loads are computed and are considered to be representative of the runoff for the water year.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT^3/S, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to that material in a representative water sample which passes through a 0.45 micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at the specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (UG/G, µg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

> Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multi-celled and are counted according to the number of contained cells per sample volume, usually milliliters (mL) or liters (L).
>
> Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)		Method of analysis
Clay..........	0.00024	0.004	Sedimentation
Silt..........	.004	.062	Sedimentation
Sand..........	.062	2.0	Sedimentation or sieve
Gravel........	2.0	64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Percent saturation is a comparison of the actual oxygen content of water to the saturation content of oxygen, expressed in terms of percent.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

pH indicates the degree of acidity or alkalinity of water and is expressed in terms of pH units. The pH value of a solution is the negative logarithm of the concentration of hydrogen ions, in moles per liter. A pH of 7.0 indicates that the water is neither acid nor alkaline. pH readings progressively lower than 7.0 denote increasing acidity and those progressively higher than 7.0 denote increasing alkalinity. The pH of most natural surface waters ranges between 6 and 8.

Picocurie (PC, pCi) is one trillionth (1×10^{12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bedload is that sediment carried by a river in rolling and saltation on or near the streambed.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage is the height of a water surface above an established datum plane; also gage height.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lived.

Natural substrate refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and polyethylene strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 μm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 μm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of suspended, total constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata, is the following:

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	Hexageria
Species	Hexagenia limbata

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the presence of a thermograph or a digital mechanism that automatically records water temperatures on paper tape.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour day.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and includes 9 of the 12 months of that calendar year plus the last 3 months of the previous calendar year. Thus, the year ending September 30, 1980, is called the "1980 water year."

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indentation in a list of stations in the front of the report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 05051700, which appears just to the left of the station name, includes the 2-digit part number "05" plus the 6-digit downstream order number "051700".

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude; the next 7 digits denote degrees, minutes, and seconds of longitude; and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 1.

In order to compare data for wells in other publications, such as the county ground-water studies, the wells in this report are also numbered according to a system based on the location in the public land classification of the U.S. Bureau of Land Management. The system is illustrated in figure 2. The first numeral denotes the township north of a base line, the second numeral denotes the range west of the fifth principal meridian, and the third numeral denotes the section in which the well is located. The letters A, B, C, and D designate, respectively, the northeast, northwest, southwest, and southeast quarter section, quarter-quarter section, and quarter-quarter-quarter section (10-acre or 4-hectare tract). For example, well 139-049-15ADC is in the SW¼SE¼NE¼ sec. 15, T. 139 N., R. 049 W. Consecutive terminal numerals are added if more than one well is recorded within a 10-acre tract.

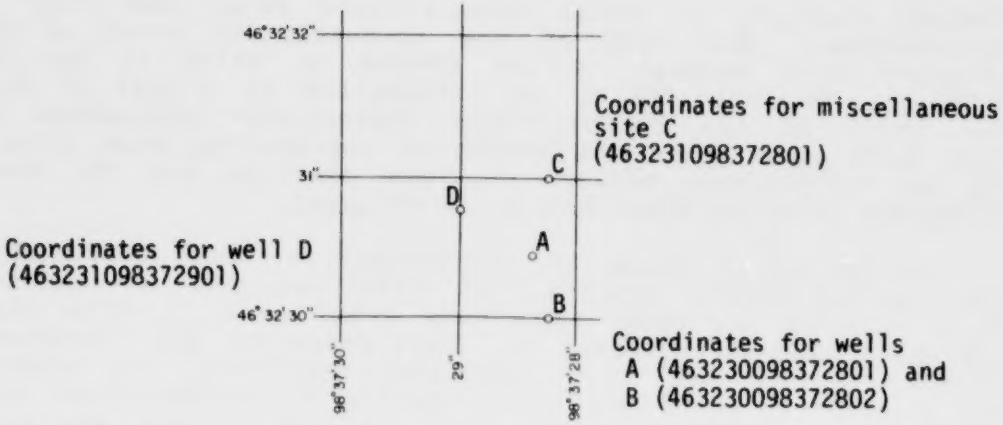
46°32'32"
Coordinates for miscellaneous site C (463231098372801)
C
31"
D
Coordinates for well D (463231098372901)
A
B
46°32'30"
Coordinates for wells A (463230098372801) and B (463230098372802)
98°37'30"
29"
98°37'28"

FIGURE 1--System for numbering wells and miscellaneous sites (latitude and longitude)

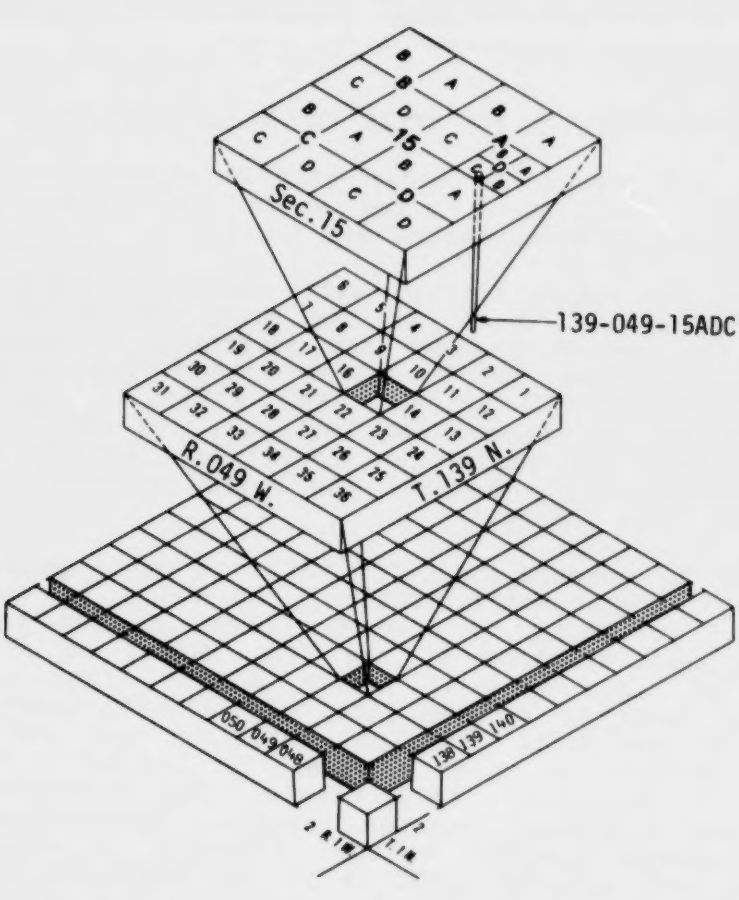

FIGURE 2--System for numbering wells and miscellaneous sites (township and range)

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from man-made changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and hydrographic comparison with other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1980 stands for the water year October 1, 1979, to September 30, 1980. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use; the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 9.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations, information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stations that have 10 or more complete years of record, if the median differs from the average by more than 10 percent.

Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with "EXTREMES FOR THE CURRENT YEAR"; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skelton rating tables are published, immediately following EXTREMES, for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations and the second is a table of both low flow and high flow measurements. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, Va. 22092, maintains an index of all discharge measurement sites in the State. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, water temperature or sediment discharge) extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diel temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

Parameter codes

In most of the column headings of this report the names of the constituents or properties for which data are given are followed by five-digit codes which appear in parentheses. These codes, called parameter codes, are identical to those introduced or approved by the U.S. Environmental Protection Agency and are widely used by federal and state agencies. The codes indicate, to one having a key, more precisely than the verbal column headings can the constituents or properties being reported. Data listed under a given code in this report should be comparable to those listed under the same code by other agencies.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs. See figures 1 and 2.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.

3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.

5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

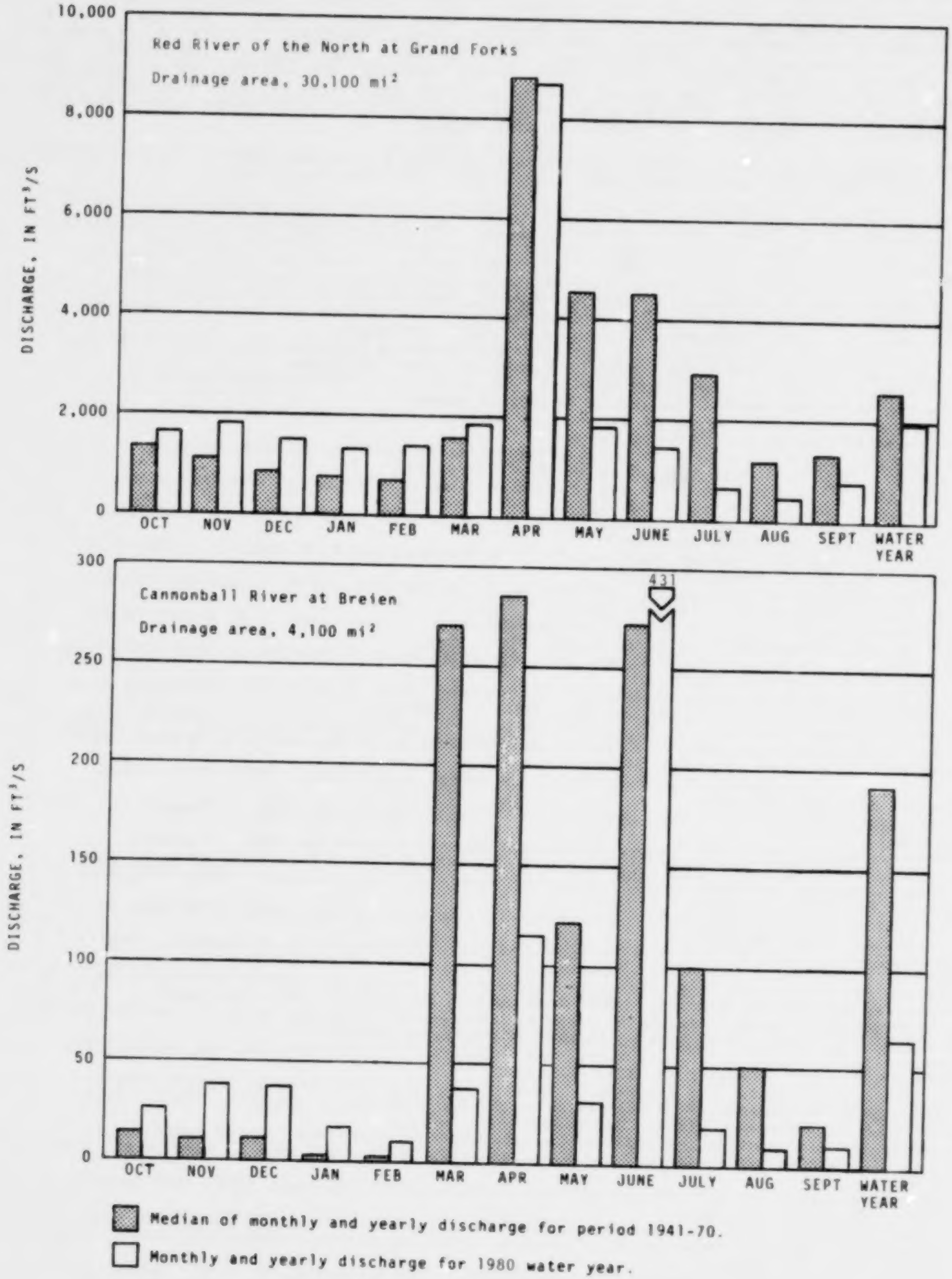

FIGURE 3.--Discharge during 1980 water year compared with median discharge for period 1941-70 for two representative gaging stations.

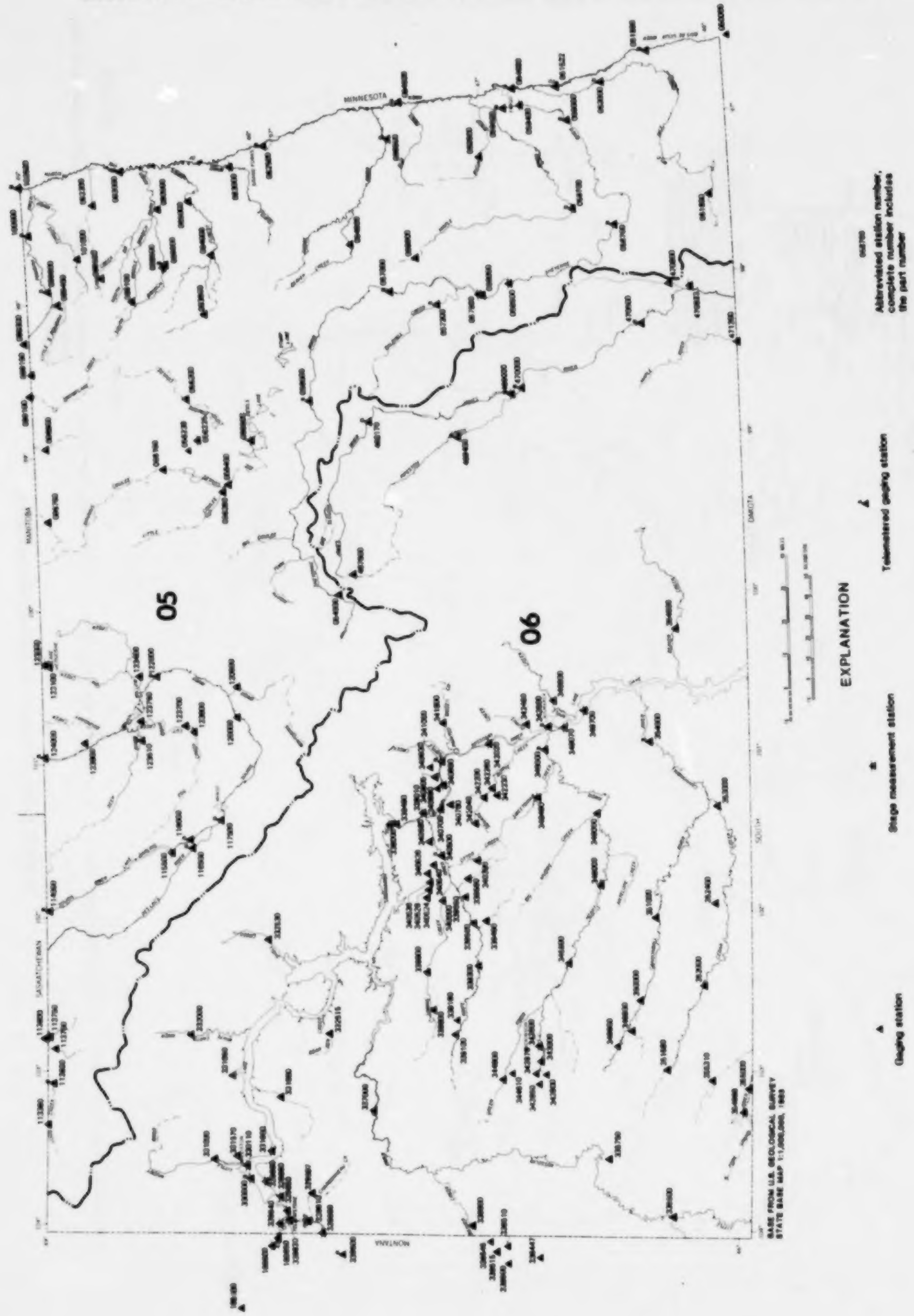
MANITOBA
SASKATCHEWAN
MINNESOTA
MONTANA
SOUTH DAKOTA
05
06
BASE FROM U.S. GEOLOGICAL SURVEY
STATE BASE MAP 1:1,000,000, 1963
EXPLANATION
Gaging station
Stage measurement station
Telemetered gaging station
Abbreviated station number, complete number includes the part number

FIGURE 4--Locations of lake, crest-stage and stream gaging stations.

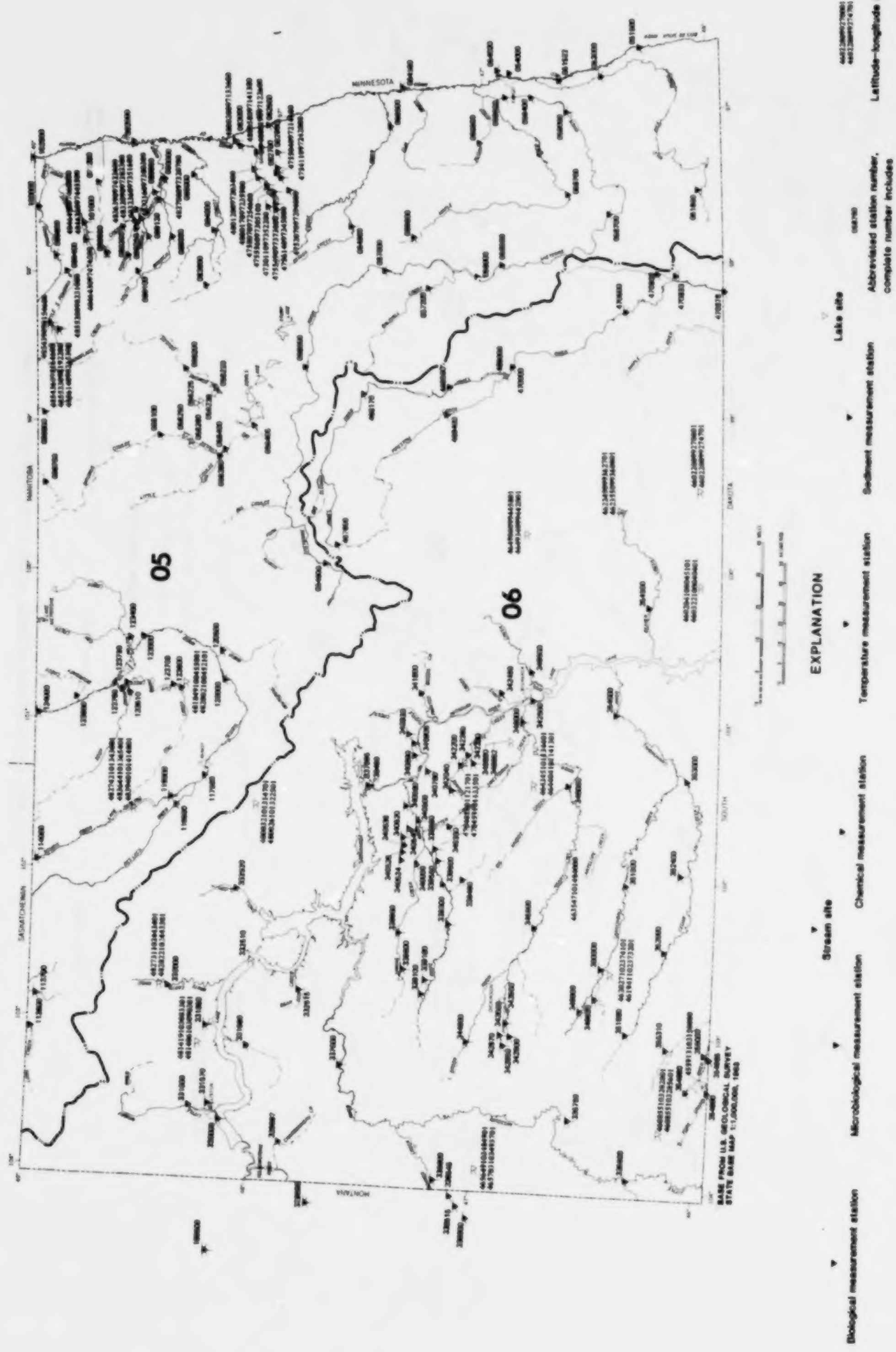
MANITOBA
SASKATCHEWAN
MINNESOTA
MONTANA
SOUTH DAKOTA
05
06
BASE FROM U.S. GEOLOGICAL SURVEY STATE BASE MAP 1:1,000,000, 1963
EXPLANATION
Biological measurement station
Microbiological measurement station
Stream site
Chemical measurement station
Lake site
Temperature measurement station
Sediment measurement station
Abbreviated station number, complete number includes the part number
Latitude-longitude identifier

FIGURE 5--Locations of water-quality stations.

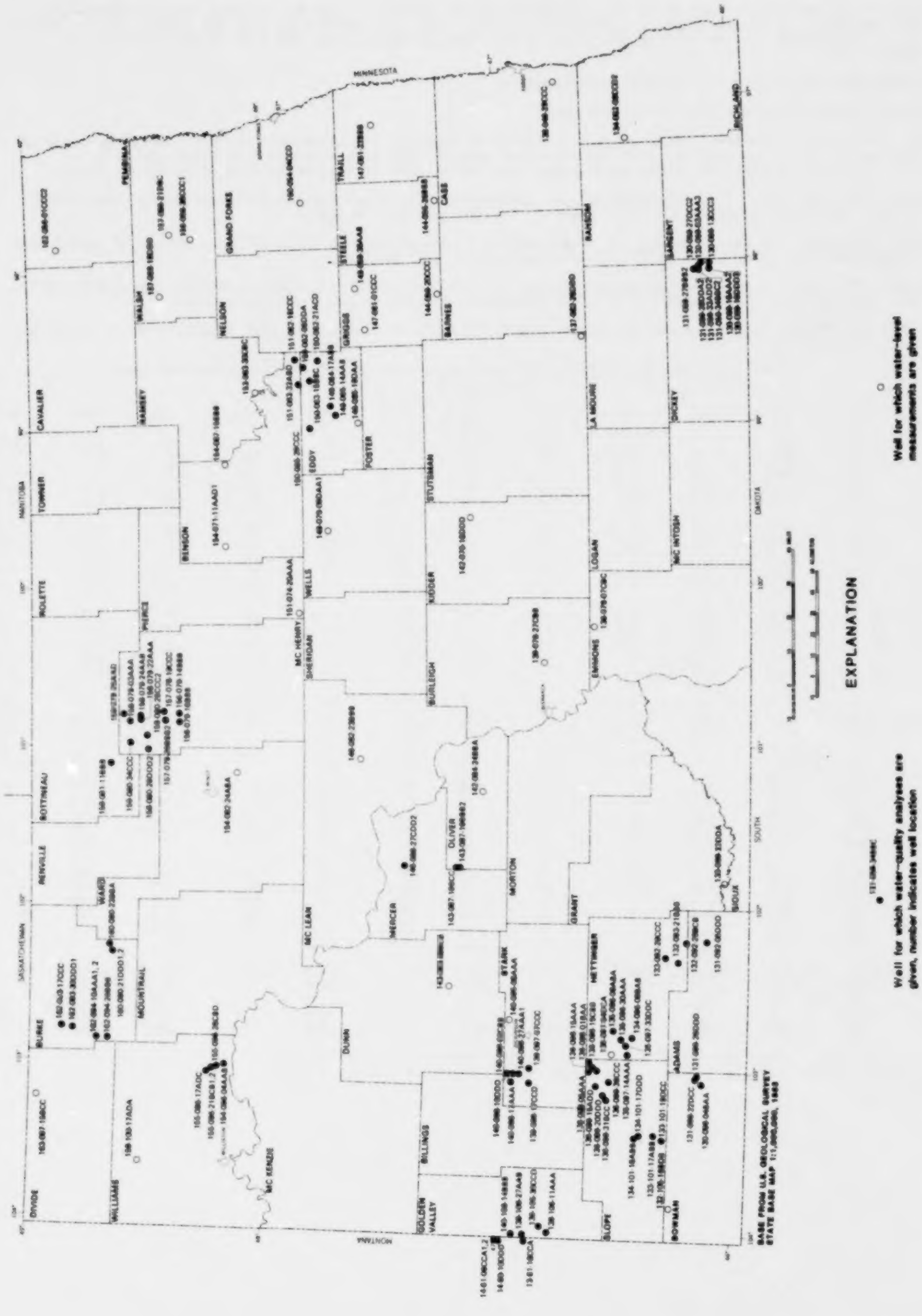

FIGURE 6--Locations of ground-water observation wells.

05050000 BOIS DE SIOUX RIVER NEAR WHITE ROCK, SD

LOCATION.--Lat 45°51'45", long 96°34'25", in SW¼SW¼ sec.27, T.128 N., R.47 W., Roberts County, Hydrologic Unit 09020101, on Sisseton Indian Reservation, on left bank just downstream from Big Slough Outlet, 300 ft (91 m) downstream from White Rock Dam, 4 mi (6 km) south of White Rock, and 5 mi (8 km) northwest of Wheaton, MN.

DRAINAGE AREA.--1,160 mi² (3,000 km²), approximately.

PERIOD OF RECORD.--October 1941 to current year.

GAGE.--Water-stage recorder. Datum of gage is 960.00 ft (292.608 m), adjustment of 1912 (levels by Corps of Engineers). Prior to Jan. 14, 1943, nonrecording gage at same site at datum 0.11 ft (0.034 m) lower. Jan. 15, 1943, to Sept. 30, 1963, water-stage recorder at same site at datum 0.11 ft (0.034 m) lower.

REMARKS.--Records fair. Flow regulated by Lake Traverse-Bois de Sioux Flood Control and Water Conservation project, available capacity for flood control, 137,000 acre-ft (169 hm³).

AVERAGE DISCHARGE.--39 years, 80.0 ft³/s (2.266 m³/s), 57,960 acre-ft/yr (71.5 hm³/yr); median of yearly mean discharges, 53.4 ft³/s (1.512 m³/s), 38,690 acre-ft/yr (47.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,770 ft³/s (107 m³/s), occurred during period Apr. 19-21, 1969, gage height, 15.07 ft (4.593 m), from floodmark; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 169 ft³/s (4.79 m³/s) June 14, gage height, 6.19 ft (1.887 m); no flow Oct. 1-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.1	9.1	8.9	11	12	21	34	7.7	48	4.9	.22
2	.00	5.8	9.2	8.9	11	12	12	36	10	32	5.7	.19
3	.00	6.0	9.4	8.9	11	12	9.1	36	11	28	4.1	.16
4	.00	5.2	9.4	8.9	12	12	4.6	35	8.5	31	3.8	.16
5	.00	2.8	9.3	8.9	12	12	4.6	34	11	35	3.1	.11
6	.00	5.5	9.2	8.8	12	12	4.4	32	32	33	2.4	.06
7	.00	5.5	9.2	8.6	12	12	4.4	32	62	28	3.4	.04
8	.00	5.2	9.2	8.5	12	12	4.6	32	62	7.5	3.1	.05
9	.00	5.8	9.2	8.4	12	12	24	32	60	6.3	2.4	.04
10	.00	5.9	9.2	8.3	12	12	44	34	62	8.3	3.2	.02
11	29	6.2	9.2	8.2	12	12	44	32	62	10	3.9	.03
12	55	6.3	9.2	8.2	12	12	40	32	62	7.5	3.2	.08
13	50	7.0	9.2	8.3	12	12	36	32	94	5.8	3.0	.12
14	49	7.3	9.1	8.4	12	12	34	31	163	10	3.4	.09
15	29	7.9	9.1	8.7	12	13	31	31	165	9.1	2.3	.04
16	1.1	8.6	9.1	8.9	12	17	29	30	122	6.6	.69	.10
17	.82	9.6	9.1	9.1	12	22	26	31	82	6.0	.46	.05
18	1.1	10	9.1	9.4	12	28	24	31	79	6.3	.32	.11
19	1.2	11	9.1	9.7	12	61	26	30	73	6.3	.41	.03
20	.85	10	9.0	10	12	78	26	27	68	6.9	.35	.08
21	.45	7.3	9.0	10	12	80	26	24	66	7.2	.32	.04
22	.40	5.4	9.0	10	12	76	31	22	64	5.2	.24	.12
23	.40	8.4	9.0	10	12	77	23	15	61	4.9	.23	.03
24	.55	9.1	8.9	10	12	87	22	11	62	5.5	.20	.07
25	.60	9.1	8.9	10	12	81	24	14	55	6.6	.36	.08
26	1.3	9.1	8.9	10	12	80	27	13	53	4.9	.31	.04
27	.52	9.1	8.9	10	12	83	22	13	52	5.5	.19	.05
28	.62	9.1	8.9	11	12	84	21	12	53	6.0	.10	5.9
29	.48	9.1	8.9	11	12	85	24	7.5	53	5.2	.19	26
30	.38	9.1	8.9	11	---	83	29	8.2	50	7.2	.18	10
31	.48	---	8.9	11	---	60	---	6.8	---	5.8	.15	---
TOTAL	223.25	218.5	281.8	290.0	345	1263	697.7	790.5	1865.2	395.6	56.60	44.11
MEAN	7.20	7.28	9.09	9.35	11.9	40.7	23.3	25.5	62.2	12.8	1.83	1.47
MAX	55	11	9.4	11	12	87	44	36	165	48	5.7	26
MIN	.00	2.1	8.9	8.2	11	12	4.4	6.8	7.7	4.9	.10	.02
AC-FT	443	433	559	575	684	2510	1380	1570	3700	785	112	87

CAL YR 1979 TOTAL 71103.74 MEAN 195 MAX 1020 MIN .00 AC-FT 141000
WTR YR 1980 TOTAL 6471.26 MEAN 17.7 MAX 165 MIN .00 AC-FT 12840

05051500 RED RIVER OF THE NORTH AT WAHPETON, ND

LOCATION.--Lat 46°15'55", long 96°35'40", in NE¼ sec.8, T.132 N., R.47 W., Richland County, Hydrologic Unit 09020104, on left bank in Wahpeton, 800 ft (240 m) downstream from confluence of Bois de Sioux and Otter Tail Rivers, and at mile 548.6 (882.7 km).

DRAINAGE AREA.--4,010 mi² (10,390 km²), approximately.

PERIOD OF RECORD.--April 1942 to current year. Gage-height records collected in this vicinity since 1917 are contained in reports of the U.S. Weather Bureau.

GAGE.--Water-stage recorder and concrete and wooden dam. Datum of gage is 942.97 ft (287.417 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1943, U.S. Weather Bureau nonrecording gage 800 ft (240 m) upstream, converted to present datum. Aug. 6, 1943, to Oct. 27, 1950, nonrecording gage at present site and datum.

REMARKS.--Records fair. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft (17.4 hm³) at elevation 1,070 ft (326.136 m) National Geodetic Vertical Datum of 1929, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft (169 hm³), available for flood control; numerous other controlled lakes and ponds, and several powerplants.

AVERAGE DISCHARGE.--37 years (1943-80), 535 ft³/s (15.15 m³/s), 387,600 acre-ft/yr (478 hm³/yr); median of yearly mean discharges, 480 ft³/s (13.6 m³/s), 348,000 acre-ft/yr (429 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,200 ft³/s (261 m³/s) Apr. 10, 1969, gage height, 16.34 ft (4.980 m); minimum daily, 1.7 ft³/s (0.048 m³/s) Aug. 28 to Sept. 5, 9, 10, 1976; minimum observed gage height, 0.63 ft (0.192 m) Aug. 29, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 17.0 ft (5.182 m), discharge, 10,500 ft³/s (297 m³/s) occurred in the spring of 1897 and has not been exceeded since.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,100 ft³/s (87.8 m³/s) Apr. 1, gage height, 10.71 ft (3.264 m), backwater from ice; minimum daily, 27 ft³/s (0.76 m³/s) Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	502	390	300	420	440	450	2960	746	422	313	195	40
2	502	373	320	420	440	450	2180	742	389	264	199	45
3	486	417	320	420	430	460	1300	714	372	253	199	40
4	433	418	402	410	430	460	850	674	400	218	185	35
5	353	419	402	410	430	430	746	666	471	182	182	35
6	394	421	354	410	430	440	630	662	743	170	197	35
7	403	421	302	330	430	460	518	682	924	167	250	30
8	412	417	280	330	430	470	590	714	894	167	275	30
9	419	419	225	410	420	510	786	714	775	170	209	30
10	419	382	250	410	420	540	965	706	687	163	179	27
11	419	330	250	410	410	540	1120	706	629	161	163	30
12	419	420	200	330	400	540	1060	698	570	149	159	43
13	428	420	250	410	400	530	854	694	579	131	161	39
14	479	400	310	470	390	520	806	686	736	143	120	36
15	493	390	318	450	390	530	786	681	838	134	115	35
16	488	390	310	310	390	550	758	670	792	131	122	32
17	470	386	325	260	390	600	798	617	670	131	108	32
18	445	386	358	420	380	630	846	546	528	151	94	33
19	436	374	350	410	390	610	838	534	469	170	92	32
20	427	366	350	410	410	550	830	527	433	225	100	33
21	419	350	350	420	420	570	818	482	421	215	90	34
22	417	350	350	420	420	670	802	427	413	209	80	33
23	420	350	380	330	420	720	806	417	404	203	70	33
24	454	350	380	420	420	740	806	416	399	194	60	36
25	430	348	380	420	420	770	790	415	402	197	55	38
26	342	348	380	420	420	830	782	389	382	198	50	36
27	316	348	400	440	450	910	774	254	354	194	45	35
28	306	216	420	470	450	1050	770	354	342	196	40	34
29	302	121	430	460	450	1360	758	344	338	197	50	36
30	318	201	430	450	---	1900	750	354	337	229	45	36
31	410	---	430	450	---	2510	---	390	---	215	40	---
TOTAL	12963	10921	10506	12550	12120	22300	28077	17621	16113	5840	3929	1043
MEAN	418	364	339	405	418	719	936	568	537	188	127	34.8
MAX	502	421	430	470	450	2510	2960	746	924	313	275	45
MIN	302	121	200	260	380	430	518	254	337	131	40	27
AC-FT	25710	21660	20840	24890	24040	44230	55690	34950	31960	11580	7790	2070

CAL YR 1979 TOTAL 343580 MEAN 941 MAX 7000 MIN 100 AC-FT 681500
WTR YR 1980 TOTAL 153983 MEAN 421 MAX 2960 MIN 27 AC-FT 305400

05051522 RED RIVER OF THE NORTH AT HICKSON, ND

LOCATION.--Lat 46°39'35", long 96°47'44", in SW¼ sec.19, T.137 N., R.48 W., Clay County, MN, Hydrologic Unit 09020104, on right bank 60 ft (18 m) downstream from bridge on township road, and 1 mi (2 km) southeast of Hickson, ND.

DRAINAGE AREA.--4,300 mi² (11,100 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 877.06 ft (267.3 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft (17.4 hm³) at elevation 1,070 ft (326.136 m) National Geodetic Vertical Datum of 1929, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft (169 hm³), available for flood control; numerous other controlled lakes and ponds; and several powerplants.

AVERAGE DISCHARGE.--5 years, 550 ft³/s (15.58 m³/s), 398,500 acre-ft/yr (491 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,600 ft³/s (272 m³/s) Apr. 18, 1979, gage height, 33.03 ft (10.068 m); no flow Oct. 26, 1976 to Jan. 9, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,250 ft³/s (92.0 m³/s) Apr. 4, gage height, 19.13 ft (5.831 m), from graph based on gage readings; minimum daily, 26 ft³/s (0.74 m³/s) Sept. 19-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	496	372	156	380	470	430	2530	760	384	332	204	55
2	496	392	298	380	470	430	2950	752	424	328	188	53
3	496	383	420	380	460	430	3160	752	420	304	176	48
4	499	388	420	380	440	430	3180	736	420	288	172	44
5	467	400	412	380	430	430	3150	700	424	264	176	41
6	400	400	448	380	420	432	2570	668	436	228	172	43
7	367	402	440	385	396	420	2020	656	540	196	188	43
8	390	406	384	390	396	424	1200	660	760	160	244	37
9	398	378	340	315	384	430	768	688	840	172	276	33
10	402	320	296	286	396	450	812	708	784	172	268	29
11	405	268	248	290	388	470	920	704	700	180	208	35
12	402	292	256	318	380	490	1020	704	636	164	168	37
13	400	356	280	390	380	490	1050	700	588	160	152	39
14	407	476	240	390	368	490	932	696	572	148	152	46
15	423	504	268	390	364	490	840	696	648	128	140	50
16	451	496	272	422	360	500	800	692	780	131	124	37
17	457	456	272	338	368	510	784	688	800	128	120	28
18	459	444	280	290	372	540	776	668	736	140	112	28
19	448	432	292	320	372	580	816	600	620	140	89	26
20	432	408	320	390	372	620	828	560	524	144	78	26
21	420	396	336	400	376	640	828	547	480	164	84	26
22	409	384	328	400	392	640	812	533	448	200	97	26
23	403	348	328	360	408	640	796	484	436	208	93	26
24	404	352	336	370	408	664	792	453	424	200	93	28
25	408	360	356	380	412	720	792	444	416	192	81	28
26	430	360	358	400	420	760	792	440	404	180	64	29
27	395	360	355	410	428	800	792	436	404	160	58	33
28	346	291	355	410	424	868	780	376	376	188	55	35
29	323	176	355	410	420	1040	772	348	352	184	61	35
30	316	162	360	450	---	1530	768	372	336	184	58	37
31	334	---	380	470	---	2090	---	372	---	200	53	---
TOTAL	12883	11162	10169	11654	11674	19678	39030	18593	16112	6007	4204	1081
MEAN	416	372	329	376	403	641	1301	600	537	194	136	36.0
MAX	499	504	448	470	470	2090	3180	760	840	332	276	55
MIN	316	162	156	286	360	420	768	348	336	128	53	26
AC-FT	25550	22140	20210	23120	23160	39430	77420	36880	31960	11910	8340	2140

CAL YR 1979 TOTAL 371068 MEAN 1017 MAX 9550 MIN 100 AC-FT 736000
WTR YR 1980 TOTAL 162467 MEAN 444 MAX 3180 MIN 26 AC-FT 322300

05051522 RED RIVER OF THE NORTH AT HICKSON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to current year.
WATER TEMPERATURES: October 1975 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,900 micromhos Jan. 27, 1977; minimum daily, 190 micromhos Mar. 28, 1978.
WATER TEMPERATURES: Maximum observed, 30.5°C July 14, 1980; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 650 micromhos Sept. 8, 19, 20, 22-24; minimum daily, 320 micromhos Mar. 29.
WATER TEMPERATURES: Maximum observed, 30.5°C July 14; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS (MG/L AS CACO3) (00900)
OCT										
03...	1430	497	385	--	13.5	--	--	--	--	--
NOV										
07...	1500	408	460	--	1.5	--	--	--	--	--
DEC										
07...	1030	444	478	8.5	.0	10	3.4	13.4	91	240
JAN										
10...	1520	286	593	--	.0	--	--	--	--	--
FEB										
07...	1505	398	521	--	.5	--	--	--	--	--
MAR										
06...	1035	430	515	7.9	.0	10	3.0	12.4	88	270
29...	1100	986	481	--	.5	--	--	--	--	--
APR										
08...	0900	1280	498	--	3.5	--	--	--	--	--
16...	0945	809	491	7.9	8.0	15	25	10.0	88	240
MAY										
23...	1355	458	470	--	21.5	--	--	--	--	--
JUN										
19...	1005	619	500	8.0	21.0	90	76	6.4	74	230
JUL										
16...	1145	132	550	--	27.5	--	--	--	--	--
AUG										
13...	1530	155	443	--	23.0	--	--	--	--	--
SEP										
10...	0915	31	630	8.3	19.0	50	52	5.5	60	290

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT										
03...	--	--	--	--	--	--	--	--	--	--
NOV										
07...	--	--	--	--	--	--	--	--	--	--
DEC										
07...	15	43	31	11	18	.3	15	4.1	220	35
JAN										
10...	--	--	--	--	--	--	--	--	--	--
FEB										
07...	--	--	--	--	--	--	--	--	--	--
MAR										
06...	43	50	36	10	7	.3	15	4.5	230	42
29...	--	--	--	--	--	--	--	--	--	--
APR										
08...	--	--	--	--	--	--	--	--	--	--
16...	59	48	29	12	10	.3	18	5.6	180	75
MAY										
23...	--	--	--	--	--	--	--	--	--	--
JUN										
19...	50	46	28	15	12	.4	21	5.5	180	86
JUL										
16...	--	--	--	--	--	--	--	--	--	--
AUG										
13...	--	--	--	--	--	--	--	--	--	--
SEP										
10...	76	52	38	26	16	.7	33	6.8	210	110

05051522 RED RIVER OF THE NORTH AT HICKSON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
OCT									
03...	--	--	--	--	--	--	--	--	--
NOV									
07...	--	--	--	--	--	--	--	--	--
DEC									
07...	7.3	.2	11	287	275	.39	344	.04	.05
JAN									
10...	--	--	--	--	--	--	--	--	--
FEB									
07...	--	--	--	--	--	--	--	--	--
MAR									
06...	7.7	.2	15	307	305	.42	356	.20	.20
29...	--	--	--	--	--	--	--	--	--
APR									
08...	--	--	--	--	--	--	--	--	--
16...	6.8	.2	12	308	298	.42	673	.34	.34
MAY									
23...	--	--	--	--	--	--	--	--	--
JUN									
19...	6.2	.2	13	326	309	.44	545	.32	.23
JUL									
16...	--	--	--	--	--	--	--	--	--
AUG									
13...	--	--	--	--	--	--	--	--	--
SEP									
10...	13	.3	9.9	405	382	.55	33.9	.07	.00

DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS PO4) (00650)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)
OCT									
03...	--	--	--	--	--	--	--	--	--
NOV									
07...	--	--	--	--	--	--	--	--	--
DEC									
07...	.03	.04	1.5	1.5	1.5	6.8	.050	.00	.15
JAN									
10...	--	--	--	--	--	--	--	--	--
FEB									
07...	--	--	--	--	--	--	--	--	--
MAR									
06...	.21	.25	.99	1.2	1.4	6.2	.070	.25	.21
29...	--	--	--	--	--	--	--	--	--
APR									
08...	--	--	--	--	--	--	--	--	--
16...	.06	.07	1.2	1.3	1.6	7.3	.160	.31	.49
MAY									
23...	--	--	--	--	--	--	--	--	--
JUN									
19...	.14	.17	1.5	1.6	1.9	8.5	.280	.46	.86
JUL									
16...	--	--	--	--	--	--	--	--	--
AUG									
13...	--	--	--	--	--	--	--	--	--
SEP									
10...	.06	.07	1.5	1.6	1.7	7.4	.180	.18	.55

DATE	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS P) (70507)	PHOSPHORUS, HYDROLYZABLE TOTAL (MG/L AS P) (00669)	PHOSPHORUS, HYDRO. + ORTHO TOTAL (MG/L AS P) (00678)	PHOSPHORUS, ORGANIC TOTAL (MG/L AS P) (00670)	BORON, DISSOLVED (UG/L AS B) (01020)
DEC						
07...	.040	.00	.03	.03	.02	60
MAR						
06...	.050	.08	.12	.20	.00	80
APR						
16...	.070	.10	.06	.16	.00	70
JUN						
19...	.120	.15	.10	.25	.03	100
SEP						
10...	.080	.06	.00	.04	.14	160

05051522 RED RIVER OF THE NORTH AT HICKSON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	PHENOLS (UG/L) (32730)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)
NOV							
07...	--	--	--	10	11	--	--
DEC							
07...	11	.5	2	6	7.2	--	--
JAN							
10...	--	--	--	10	7.7	--	--
FEB							
07...	--	--	--	8	8.6	--	--
MAR							
06...	11	.9	0	17	20	--	--
29...	--	--	--	28	75	--	--
APR							
08...	--	--	--	228	788	60	92
16...	9.2	.6	2	54	118	--	--
MAY							
23...	--	--	--	68	84	--	--
JUN							
19...	11	1.6	5	222	371	--	--
JUL							
16...	--	--	--	225	80	--	--
AUG							
13...	--	--	--	114	48	--	--
SEP							
10...	14	1.4	4	54	4.5	--	--

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)
APR								
08...	99	99	99	99	100	6	11	18

DATE	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR							
08...	31	55	82	91	94	94	100

05051522 RED RIVER OF THE NORTH AT HICKSON, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	400	440	480	480	480	510	350	---	---	545	385	530
2	395	400	---	500	510	---	360	460	470	540	---	580
3	395	420	500	500	---	500	380	450	455	545	---	560
4	400	---	540	500	480	590	400	---	490	545	430	565
5	400	410	480	500	480	500	420	430	485	540	420	580
6	440	400	460	---	460	490	---	475	480	---	420	625
7	---	400	500	540	480	480	460	460	455	560	400	---
8	420	460	490	500	470	600	460	460	---	580	420	650
9	440	460	---	460	500	---	500	450	465	550	440	640
10	400	480	500	470	---	550	560	440	460	560	---	645
11	400	---	500	540	490	560	500	---	450	560	420	600
12	400	470	470	640	500	500	450	445	420	560	480	625
13	400	460	625	---	550	520	---	---	465	---	440	605
14	---	460	530	480	460	550	450	---	485	525	420	---
15	410	540	500	470	520	540	500	380	---	530	460	600
16	420	430	---	560	540	---	480	440	470	530	485	600
17	420	420	600	480	---	470	480	430	580	525	---	635
18	420	---	500	480	550	530	470	---	520	520	510	640
19	500	430	470	480	530	460	470	450	500	520	500	650
20	520	430	490	---	540	420	---	460	520	---	495	650
21	---	420	560	570	530	450	450	460	555	500	500	---
22	475	430	480	530	460	480	450	470	---	500	500	650
23	440	470	---	570	500	---	440	460	540	480	575	650
24	430	470	460	580	---	550	450	460	530	460	---	650
25	410	---	500	520	520	580	450	---	530	440	480	645
26	430	450	520	560	500	500	440	485	535	380	480	635
27	440	470	500	---	520	460	---	475	530	---	480	605
28	---	460	520	490	520	460	460	470	530	425	480	---
29	430	480	520	440	580	320	450	465	---	400	480	560
30	450	480	---	520	---	---	460	460	520	430	485	580
31	440	---	480	480	---	360	---	580	---	340	---	---
MEAN	427	448	507	513	507	497	452	459	498	504	463	612

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	4.5	.0	.5	.5	.5	2.5	---	---	21.5	24.0	20.0
2	14.5	4.0	---	.0	.5	---	2.5	19.0	19.5	22.5	---	19.5
3	13.0	3.0	.5	.0	---	.5	2.5	20.0	21.0	24.5	---	22.0
4	12.5	---	1.0	.0	.5	.5	2.5	---	19.5	25.5	21.5	18.0
5	12.5	2.0	2.0	.0	.5	.5	2.0	19.0	19.0	25.0	22.5	24.0
6	10.5	1.5	.5	---	.5	.5	---	17.5	20.0	---	22.0	24.5
7	---	1.0	.0	.0	.5	.5	3.0	14.5	18.5	27.0	21.5	---
8	9.5	.0	.0	.0	.5	.5	4.0	14.0	---	25.5	22.5	23.0
9	8.5	.0	---	.0	.5	---	5.5	13.5	19.0	27.5	22.0	20.5
10	9.0	.0	.5	.0	---	.5	7.0	13.5	20.5	29.5	---	20.5
11	8.0	---	.5	.0	.5	.5	6.0	---	21.0	29.0	24.0	18.0
12	6.5	.0	.0	.0	.5	.5	7.0	14.0	22.5	29.5	22.5	17.5
13	7.0	.0	.0	---	.5	.5	---	14.0	23.0	---	23.0	17.0
14	---	1.0	1.0	.5	.5	.5	8.0	14.0	23.5	30.5	24.5	---
15	7.0	1.0	.0	1.0	.5	1.0	9.0	14.5	---	27.0	24.0	17.0
16	8.0	1.5	---	.5	.0	---	10.5	15.0	22.5	28.0	20.0	16.0
17	8.0	2.0	.5	.0	---	1.5	11.5	16.0	23.0	26.0	---	14.5
18	9.0	---	.5	.0	.0	1.0	13.0	---	21.0	28.0	22.0	14.5
19	9.0	1.5	1.0	.5	.0	1.0	13.5	18.0	22.0	25.0	23.5	14.5
20	9.5	.5	1.0	---	.5	1.5	---	19.0	21.5	---	23.5	16.5
21	---	1.0	1.5	1.0	1.0	1.0	16.5	20.5	22.5	23.5	23.5	---
22	8.0	1.5	.0	.0	.0	1.0	15.5	21.5	---	25.5	27.0	14.5
23	7.5	.5	---	1.0	1.0	---	15.5	22.0	[illegible]	25.0	24.5	12.5
24	7.5	.0	.0	.5	---	1.5	14.5	22.5	25.0	24.5	---	12.5
25	6.0	---	.0	.0	.0	1.0	14.5	---	25.0	23.5	23.5	12.5
26	6.0	.0	.0	.0	.5	1.0	14.0	23.5	23.0	22.5	21.5	12.5
27	7.5	.5	1.0	---	.5	1.5	---	24.5	23.0	---	25.0	14.5
28	---	.5	.0	.0	.5	1.5	16.0	24.0	21.0	25.0	21.5	---
29	7.5	.0	.0	.0	.0	4.0	17.0	23.5	---	25.5	22.0	17.5
30	7.0	.0	---	.0	---	---	17.0	22.5	21.5	25.0	22.5	15.0
31	5.5	---	.5	.0	---	2.0	---	21.5	---	25.0	---	---
MEAN	9.0	1.0	.5	.0	.5	1.0	9.5	18.5	21.5	26.0	23.0	17.5

05051600 WILD RICE RIVER NEAR RUTLAND, ND

LOCATION.--Lat 46°01'20", long 97°30'40", in SE¼SE¼ sec.36, T.130 N., R.55 W., Sargent County, Hydrologic Unit 09020105, on right bank 1,000 ft (305 m) upstream from bridge on county highway, 2 mi (3 km) south of Rutland, and 10 mi (16 km) upstream from Lake Tewaukon.

DRAINAGE AREA.--546 mi² (1,410 km²), of which about 250 mi² (648 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1959 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,197.73 ft (365.068 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 11, 1960, nonrecording gage at same site and datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--21 years, 9.18 ft³/s (0.260 m³/s), 6,650 acre-ft/yr (8.20 hm³/yr); median of yearly mean discharges, 5.4 ft³/s (0.15 m³/s), 3,900 acre-ft/yr (4.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,270 ft³/s (36.0 m³/s) Apr. 8, 1969, gage height, 8.77 ft (2.673 m), backwater from ice; maximum gage height, 8.78 ft (2.676 m) Apr. 8, 1969, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 130 ft³/s (3.68 m³/s) Mar. 23, gage height, 4.50 ft (1.372 m), only peak above base of 30 ft³/s (0.85 m³/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	57	1.4	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	55	1.4	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	53	1.2	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	50	.93	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	44	.80	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	39	.66	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	32	.53	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	29	.46	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	26	1.5	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	22	1.1	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	21	.32	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	20	.24	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	18	.17	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	16	.13	1.1	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	13	.09	.95	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	11	.03	.85	.00	.00	.00
17	.00	.00	.00	.00	.00	.50	9.6	.00	.70	.00	.00	.00
18	.00	.00	.00	.00	.00	3.5	9.1	.00	.55	.00	.00	.00
19	.00	.00	.00	.00	.00	8.1	8.1	.00	.40	.00	.00	.00
20	.00	.00	.00	.00	.00	17	6.7	.00	.34	.00	.00	.00
21	.00	.00	.00	.00	.00	69	5.9	.00	.30	.00	.00	.00
22	.00	.00	.00	.00	.00	92	4.8	.00	.24	.00	.00	.00
23	.00	.00	.00	.00	.00	124	3.4	.00	.20	.00	.00	.00
24	.00	.00	.00	.00	.00	100	2.9	.00	.17	.00	.00	.00
25	.00	.00	.00	.00	.00	83	2.7	.00	.13	.00	.00	.00
26	.00	.00	.00	.00	.00	67	2.5	.00	.08	.00	.00	.00
27	.00	.00	.00	.00	.00	60	2.4	.00	.02	.00	.00	.00
28	.00	.00	.00	.00	.00	62	2.4	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	64	1.8	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	60	1.6	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	59	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	869.10	569.9	10.96	6.03	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	28.0	19.0	.35	.20	.000	.000	.000
MAX	.00	.00	.00	.00	.00	124	57	1.5	1.1	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	1.6	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	1720	1130	22	12	.00	.00	.00

CAL YR 1979 TOTAL 4227.41 MEAN 11.6 MAX 357 MIN .00 AC-FT 8390
WTR YR 1980 TOTAL 1455.99 MEAN 3.98 MAX 124 MIN .00 AC-FT 2890

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND

LOCATION.--Lat 46°28'05", long 96°47'00", in NE¼NE¼ sec.36, T.135 N., R.49 W., Richland County, Hydrologic Unit 09020105, on right bank 420 ft (130 m) upstream from bridge on county highway, 0.75 mi (1.2 km) upstream from rubble masonry dam which serves as control, 3.2 mi (5 km) northwest of Abercrombie, and 7 mi (11 km) downstream from Antelope Creek.

DRAINAGE AREA.--2,080 mi² (5,390 km²), of which about 590 mi² (1,530 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1932 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1388: 1939, 1941(M). WSP 1728: Drainage area.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 907.94 ft (276.740 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 7, 1939, nonrecording gage at site 420 ft (130 m) downstream at datum 5.0 ft (1.52 m) lower. Dec. 7, 1939, to Nov. 24, 1952, nonrecording gage at site 0.75 mi (1.2 km) downstream at present datum.

REMARKS.--Records fair. Some regulation by Fish and Wildlife Service reservoirs, of which Lake Tewaukon is the largest. Some small diversions for irrigation.

AVERAGE DISCHARGE.--48 years, 75.3 ft³/s (2.132 m³/s), 54,550 acre-ft/yr (67.3 hm³/yr); median of yearly mean discharges, 34 ft³/s (0.96 m³/s), 24,600 acre-ft/yr (30 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,540 ft³/s (270 m³/s) Apr. 11, 1969, gage height, 24.58 ft (7.492 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in spring of 1897 reached a stage of 27.5 ft (8.38 m) present site and datum, from floodmarks pointed out by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,800 ft³/s (51.0 m³/s) Apr. 1, gage height, 12.22 ft (3.725 m), backwater from ice, only peak above base of 300 ft³/s (8.50 m³/s); minimum daily discharge, 0.01 ft³/s (<0.001 m³/s) Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.12	2.7	7.1	2.7	.50	1.0	1500	52	3.6	3.8	.08	.76
2	.12	3.8	6.4	2.7	.40	1.0	1300	49	3.3	4.5	.07	.57
3	.12	4.0	6.1	2.7	.40	1.0	1100	46	2.9	3.8	.05	.45
4	.09	3.3	6.1	2.3	.50	.90	875	44	3.8	2.5	.04	.30
5	.09	2.9	6.1	2.3	.60	.90	652	41	4.6	2.0	.01	.19
6	.08	2.3	6.7	2.0	.60	.80	489	40	8.2	1.6	3.9	.13
7	.07	2.1	7.1	2.0	.60	.70	371	39	34	1.4	24	.11
8	.07	1.8	6.1	1.8	.60	.60	277	38	78	1.0	17	.09
9	.07	1.5	5.7	1.5	.70	.60	221	37	123	.81	7.8	.09
10	.08	10	5.4	1.8	.70	.60	179	36	118	.64	4.7	.13
11	.08	10	6.1	2.0	.70	.60	149	34	93	.37	3.8	.23
12	.07	9.5	6.1	2.2	.70	.50	127	32	72	.31	3.0	.47
13	.07	9.1	4.8	2.3	.70	.50	114	30	86	.26	3.7	.60
14	.06	10	4.6	2.3	.70	.50	104	28	128	.26	3.6	.64
15	.06	12	4.6	2.3	.70	.50	93	26	155	.23	3.1	.60
16	.06	12	3.8	2.1	.70	.50	83	25	169	.18	2.1	.45
17	.06	12	3.3	2.1	.70	.50	74	23	139	.12	1.6	.38
18	.06	11	2.5	2.0	.70	.60	67	22	104	.41	1.2	.32
19	.09	10	2.3	1.6	.70	.60	66	19	83	.68	.79	.28
20	.12	9.5	2.1	1.4	.80	.70	63	17	62	1.1	.97	.23
21	.12	10	2.3	1.2	.80	.90	60	15	47	.81	1.6	.19
22	.12	9.5	2.3	1.5	.80	1.1	59	14	37	.59	1.9	.12
23	.12	10	2.3	1.2	.90	1.2	55	12	27	.45	3.0	.09
24	.09	11	2.3	1.2	1.0	1.4	54	9.0	21	.31	3.7	.10
25	.09	10	2.3	1.4	1.0	1.8	57	7.9	17	.21	3.7	.10
26	.12	10	2.1	1.2	1.1	8.0	59	6.7	14	.14	3.1	.12
27	.12	9.1	2.1	1.0	1.1	35	60	5.4	12	.09	2.6	.09
28	.12	7.5	2.1	1.0	1.1	370	59	4.4	8.2	.08	2.2	.12
29	.12	7.1	2.1	1.0	1.0	680	57	4.8	5.7	.06	1.7	.09
30	.22	7.1	2.1	.80	---	1100	54	4.4	4.5	.15	1.3	.09
31	1.4	---	2.5	.60	---	1450	---	4.0	---	.12	1.1	---
TOTAL	4.28	230.8	127.5	54.20	21.50	3663.00	8478	765.6	1663.8	28.98	107.41	8.13
MEAN	.14	7.69	4.11	1.75	.74	118	283	24.7	55.5	.93	3.46	.27
MAX	1.4	12	7.1	2.7	1.1	1450	1500	52	169	4.5	24	.76
MIN	.06	1.5	2.1	.60	.40	.50	54	4.0	2.9	.06	.01	.09
AC-FT	8.5	458	253	108	43	7270	16820	1520	3300	57	213	16

CAL YR 1979 TOTAL 74253.22 MEAN 203 MAX 5900 MIN .06 AC-FT 147300
WTR YR 1980 TOTAL 15153.20 MEAN 41.4 MAX 1500 MIN .01 AC-FT 30060

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955-56, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES: October 1966 to current year.

REMARKS.--Daily observations are made at the gaging station. Samples for chemical analyses are collected at the control 0.25 mi (0.40 km) downstream. The daily specific conductance record is considered fair. No daily temperature record available for August.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,840 micromhos Mar. 7, 1972; minimum daily, 50 micromhos Mar. 24, 1978.
WATER TEMPERATURES: Maximum daily, 29.5°C Aug. 7, 1973; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,060 micromhos Feb. 10; minimum daily, 220 micromhos Apr. 2.
WATER TEMPERATURES: Maximum daily, 26.0°C July 9, 10, 11 & 13; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT										
24...	1700	.09	1200	--	6.0	--	--	--	--	--
NOV										
29...	1255	7.2	1580	7.9	1.0	40	630	210	140	69
DEC										
18...	1300	2.5	1840	7.7	1.0	35	810	390	180	88
JAN										
14...	1720	2.2	2250	7.4	.5	30	830	300	180	93
FEB										
05...	1250	.60	2080	7.7	.5	55	1100	400	260	120
MAR										
25...	1020	1.8	2850	7.1	.5	80	1200	470	280	130
29...	1210	630	351	--	.5	--	--	--	--	--
APR										
01...	0940	1530	273	--	.5	--	--	--	--	--
04...	1140	865	360	--	3.0	--	--	--	--	--
16...	1425	80	901	8.3	10.0	40	350	140	82	35
MAY										
23...	1050	12	1370	7.9	20.0	25	580	230	130	61
JUN										
19...	1355	79	709	7.8	21.0	80	280	69	64	29
JUL										
16...	1500	.17	938	8.4	27.5	60	360	99	81	38
AUG										
13...	1820	3.9	488	7.8	26.0	110	160	22	40	15
SEP										
10...	1315	.16	721	8.3	20.0	180	270	0	63	27

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT										
24...	--	--	--	--	--	--	--	--	--	--
NOV										
29...	110	27	1.9	130	18	420	380	40	.3	24
DEC										
18...	120	24	1.8	140	21	420	500	53	.4	27
JAN										
14...	190	47	2.9	210	20	530	610	100	.5	33
FEB										
05...	250	32	3.2	270	24	740	770	160	.5	42
MAR										
25...	280	33	3.5	300	21	760	830	140	.5	39
29...	--	--	--	--	--	--	--	--	--	--
APR										
01...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
16...	55	25	1.3	69	14	210	240	23	.2	13
MAY										
23...	94	25	1.7	110	19	350	390	36	.3	9.9
JUN										
19...	42	24	1.1	53	11	210	150	16	.3	20
JUL										
16...	68	28	1.6	80	12	260	210	23	.4	28
AUG										
13...	17	16	.6	43	26	140	52	26	.3	19
SEP										
10...	38	22	1.0	60	22	280	62	33	.3	39

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	BORON, DIS-SOLVED (UG/L AS B) (01020)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)
OCT										
24...	--	--	--	--	--	--	--	--	--	--
NOV										
29...	1070	1030	1.46	20.8	.10	.300	270	56	1.1	--
DEC										
18...	1320	1240	1.80	8.91	.15	.210	390	10	.07	--
JAN										
14...	1640	1550	2.23	9.74	.02	.180	480	42	.25	--
FEB										
05...	2080	2070	2.83	3.37	.08	.320	600	55	.09	--
MAR										
25...	2260	2180	3.07	11.0	.03	1.300	640	42	.20	--
29...	--	--	--	--	--	--	--	76	129	4
APR										
01...	--	--	--	--	--	--	--	92	380	--
04...	--	--	--	--	--	--	--	133	311	10
16...	628	589	.85	136	.03	.100	210	28	6.1	--
MAY										
23...	1010	951	1.37	32.7	.00	.210	310	21	.68	--
JUN										
19...	484	460	.66	104	.18	.440	190	115	25	--
JUL										
16...	646	617	.88	.30	.00	.810	260	78	.04	--
AUG										
13...	311	280	.42	3.27	.00	1.100	130	52	.55	--
SEP										
10...	567	456	.77	.25	.65	1.800	140	20	.01	--

DATE	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT									
24...	--	--	--	--	--	--	--	--	--
NOV									
29...	--	--	--	--	--	--	--	--	--
DEC									
18...	--	--	--	--	--	--	--	--	--
JAN									
14...	--	--	--	--	--	--	--	--	--
FEB									
05...	--	--	--	--	--	--	--	--	--
MAR									
25...	--	--	--	--	--	--	--	--	--
29...	7	15	33	56	70	73	76	100	--
APR									
01...	--	--	--	--	--	--	--	--	--
04...	15	22	35	55	71	84	92	99	100
16...	--	--	--	--	--	--	--	--	--
MAY									
23...	--	--	--	--	--	--	--	--	--
JUN									
19...	--	--	--	--	--	--	--	--	--
JUL									
16...	--	--	--	--	--	--	--	--	--
AUG									
13...	--	--	--	--	--	--	--	--	--
SEP									
10...	--	--	--	--	--	--	--	--	--

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1110	951	1070	1360	2010	2600	240	1000	1350	850	---	700
2	1110	951	1010	1310	1940	2600	220	1080	1370	830	---	700
3	1070	951	951	1400	2010	2400	290	1080	1300	840	---	720
4	030	951	904	1520	1950	2300	340	1100	1350	850	---	700
5	1080	951	892	1370	2010	2200	380	1150	1330	850	---	700
6	1040	951	892	1400	2010	2150	380	1180	1400	870	950	740
7	1040	951	832	1400	2440	2150	400	1200	1400	850	390	700
8	1050	987	868	1430	2100	2150	460	1170	1200	870	560	700
9	1060	951	892	1490	2040	2200	460	1100	1200	900	460	700
10	1040	951	951	1490	3060	2000	600	1200	950	900	460	720
11	1070	951	951	1550	2180	2200	680	1170	---	900	480	720
12	968	1110	1070	1620	1840	2300	750	1170	800	900	500	720
13	974	1150	1140	1760	1940	2250	770	1150	850	920	500	740
14	979	1190	1210	1550	2360	2350	790	1200	550	900	500	740
15	1020	1190	1240	1720	2560	2400	800	1220	600	900	520	740
16	1100	1310	1310	1610	2340	2250	820	1180	500	920	540	720
17	996	1190	1370	1520	2460	2200	860	1200	520	940	580	700
18	1060	1070	1370	1630	2480	2250	900	1200	500	950	580	730
19	1030	1020	1260	1720	2390	2250	900	1250	650	950	560	730
20	1090	1070	1280	1780	2190	2750	920	1200	700	900	560	730
21	1020	951	1310	1760	2260	2700	900	1280	650	950	600	750
22	987	1070	1310	1760	2220	2480	980	1300	670	970	600	730
23	973	1170	1310	1830	2470	2540	980	1300	720	950	640	730
24	998	1130	1310	1900	2300	2500	1000	1300	770	950	620	730
25	1000	1140	1310	1900	2520	2470	980	1350	850	970	650	730
26	1050	1110	1310	1880	2690	2600	1000	1400	900	950	670	720
27	1070	1130	1430	1900	2470	950	1000	1400	920	950	690	730
28	1210	1140	1370	1880	2580	490	1000	1440	900	950	700	730
29	1220	1170	1390	1900	2580	360	980	1400	880	950	700	720
30	1070	1130	1400	2000	---	280	1000	1440	900	950	660	720
31	1010	---	1370	2020	---	240	---	1380	---	950	690	---
MEAN	1050	1060	1170	1660	2290	2050	726	1230	920	912	591	721

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	3.0	.5	.0	.0	.0	5.0	20.0	20.0	20.0		19.0
2	13.5	4.0	.0	.0	.0	.5	5.0	20.0	20.0	21.0		19.0
3	12.0	3.0	.5	.0	.5	.5	6.0	21.0	20.0	23.0		20.0
4	10.5	3.5	1.0	.5	.0	.0	5.0	23.0	18.0	22.0		19.0
5	12.0	3.0	1.0	.0	.5	.0	6.0	19.0	18.0	23.0		19.0
6	10.0	3.0	1.5	.0	1.5	.5	6.0	16.0	20.0	25.0		19.0
7	9.5	2.5	.0	.0	2.0	.0	7.0	12.0	17.0	24.0		21.0
8	9.0	2.5	.0	.0	1.5	.0	8.0	11.0	17.0	23.0		21.0
9	8.5	2.5	.0	.0	2.0	1.0	10.0	16.0	17.0	26.0		18.0
10	8.0	1.0	1.0	.0	3.0	.0	8.0	13.0	16.0	26.0		18.0
11	8.0	1.0	.0	.0	2.0	.0	7.0	15.0	20.0	26.0		17.0
12	5.5	1.5	.0	.0	2.0	.0	6.0	15.0	23.0	25.0		17.0
13	4.5	2.0	.0	1.0	1.0	.5	6.0	16.0	22.0	26.0		15.0
14	5.5	3.0	.5	.0	1.0	.5	8.0	14.0	20.0	25.0		16.0
15	6.5	1.5	.0	.5	1.0	.5	11.0	16.0	20.0	25.0		15.0
16	7.5	2.0	.0	.0	1.0	.5	12.0	17.0	20.0	25.0		15.0
17	8.5	2.0	.0	.0	1.0	.5	15.0	16.0	20.0	24.0		14.0
18	9.5	1.5	.0	.0	1.0	1.0	16.0	18.0	21.0	24.0		12.0
19	8.0	2.0	.5	.0	.5	1.0	18.0	21.0	19.0	24.0		13.0
20	10.0	2.5	1.0	.5	.5	1.0	20.0	21.0	21.0	22.0		12.0
21	8.0	1.0	1.0	.0	.5	1.5	25.0	21.0	20.0	20.0		14.0
22	5.5	1.0	.5	.0	.5	1.0	18.0	19.0	23.0	22.0		13.0
23	4.5	1.0	.0	.0	1.0	1.5	16.0	22.0	25.0	23.0		11.0
24	6.0	1.0	.0	1.0	.5	1.5	15.0	24.0	25.0	22.0		12.0
25	5.5	.5	.0	.0	.0	3.0	17.0	24.0	25.0	22.0		10.0
26	6.0	.5	.0	.5	1.0	2.0	17.0	24.0	23.0	23.0		10.0
27	7.5	.5	.0	.5	1.0	3.0	18.0	24.0	20.0	24.0		11.0
28	8.5	.0	.0	.0	.0	3.0	17.0	24.0	20.0	23.0		12.0
29	7.0	.0	.0	.0	.0	2.0	19.0	23.0	19.0	24.0		13.0
30	6.0	.5	.5	.5	---	2.0	20.0	20.0	19.0	23.0		14.0
31	5.5	---	.0	.0	---	5.0	---	23.0	---	22.0		---
MEAN	8.0	2.0	.5	.0	1.0	1.0	12.0	19.0	20.5	23.5		15.5

05054000 RED RIVER OF THE NORTH AT FARGO, ND

LOCATION.--Lat 46°51'40", long 96°47'00", in NW¼NE¼ sec.18, T.139 N., R.48 W., Cass County, Hydrologic Unit 09020104, at city waterplant on 4th St. S. in Fargo, 25 mi (40 km) upstream from mouth of Sheyenne River, and at mile 453.0 (728.9 km).

DRAINAGE AREA.--6,800 mi² (17,600 km²), approximately.

PERIOD OF RECORD.--May 1901 to current year. Published as "at Moorhead, Minn." 1901. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1902-4, 1906-7, 1910-14, 1916, 1918, 1924. WSP 1388: 1905-6, 1917-20(M), 1935(M), 1938-39(M), 1943.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 861.8 ft (262.68 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1960, to Sept. 30, 1962, water-stage recorder at present site at datum 5.6 ft (1.71 m) higher. See WSP 1728 or 1913 for history of changes prior to Oct. 1, 1960.

REMARKS.--Records good. Flow regulated by Orwell Reservoir, capacity, 14,100 acre-ft (17.4 hm³) at elevation 1,070 ft (326.136 m) National Geodetic Vertical Datum of 1929, adjustment of 1912; Lake Traverse, capacity, 137,000 acre-ft (169 hm³), available for flood control; other controlled lakes and ponds; and several powerplants. Some small diversions for municipal supply. Figures of daily discharge do not include diversions to cities of Fargo and Moorhead and from Sheyenne River.

AVERAGE DISCHARGE (UNADJUSTED).--79 years, 558 ft³/s (15.80 m³/s), 404,300 acre-ft/yr (499 hm³/yr); median of yearly mean discharges, 440 ft³/s (12.5 m³/s), 319,000 acre-ft/yr (390 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,300 ft³/s (716 m³/s) Apr. 15, 1969, gage height, 37.34 ft (11.381 m); no flow for many days in each year for period 1932-41, Sept. 30, Oct. 1, 2, 1970, Oct. 10-19, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 7, 1897 reached a stage of 39.1 ft (11.92 m) present datum, discharge, 25,000 ft³/s (708 m³/s) at site 1.5 mi (2.4 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,470 ft³/s (155 m³/s) Apr. 5, gage height, 20.74 ft (6.322 m); minimum daily, 13 ft³/s (0.37 m³/s) Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	496	369	156	390	450	400	2640	790	345	288	172	39
2	501	379	182	390	450	430	3170	774	358	287	177	35
3	489	387	263	390	450	430	3720	774	392	269	164	39
4	494	372	342	390	420	430	4200	766	449	238	148	33
5	481	382	376	390	410	450	4730	726	499	221	152	30
6	438	397	386	390	400	450	5180	682	513	204	152	30
7	372	398	414	390	390	440	4530	654	500	164	168	30
8	359	395	340	390	390	440	3110	654	654	136	190	25
9	374	388	310	330	380	440	2200	668	827	128	233	16
10	387	318	280	280	380	460	1490	696	876	128	309	13
11	384	274	240	330	370	470	1180	710	834	148	263	39
12	381	258	230	390	360	470	1170	696	777	144	185	121
13	385	300	250	390	360	470	1220	692	698	131	160	48
14	387	390	240	380	360	480	1270	692	642	117	128	35
15	394	440	210	370	360	480	1190	675	658	109	121	41
16	420	450	250	390	360	480	1020	665	824	108	111	39
17	450	440	310	390	360	490	934	663	955	108	97	35
18	474	420	320	350	350	510	886	652	958	136	85	27
19	459	410	300	285	350	550	846	608	842	114	77	25
20	444	390	310	330	350	570	854	542	672	123	80	25
21	419	382	335	390	350	600	886	507	574	120	88	21
22	406	358	335	390	370	602	862	489	509	148	68	19
23	394	350	335	390	380	605	846	458	459	168	82	19
24	388	335	335	400	390	605	822	418	424	168	77	21
25	394	335	350	360	400	670	822	404	399	152	65	21
26	413	335	350	350	400	710	830	396	382	152	55	23
27	419	335	350	400	400	800	830	390	395	152	48	23
28	371	335	350	400	400	960	814	362	366	156	41	25
29	324	249	350	420	400	1380	814	334	335	152	80	25
30	313	177	370	430	---	2020	806	323	311	156	46	23
31	381	---	390	440	---	2670	---	334	---	156	39	---
TOTAL	12791	10748	9559	11705	11190	20962	53872	18194	17427	4981	3861	945
MEAN	413	358	308	378	386	676	1796	587	581	161	125	31.5
MAX	501	450	414	440	450	2670	5180	790	958	288	309	121
MIN	313	177	156	280	350	400	806	323	311	108	39	13
AC-FT	25370	21320	18960	23220	22200	41580	106900	36090	34570	9880	7660	1870
(+)	1029	948	925	941	951	989	1154	1738	1209	1841	1292	1052
MEAN*	430	374	323	393	402	692	1815	615	601	191	146	49
AC-FT*	26400	22270	19880	24160	23150	42570	108050	37830	35780	11720	8950	2920

			OBSERVED							ADJUSTED	
CAL YR 1979	TOTAL	483712	MEAN 1325	MAX 17200	MIN	90	AC-FT	959400	MEAN 1343	AC-FT	972560
WTR YR 1980	TOTAL	176235	MEAN 482	MAX 5180	MIN	13	AC-FT	349600	MEAN 501	AC-FT	363680

+ Diversions in acre-feet to cities of Fargo and Moorhead.
* Adjusted for diversions to cities of Fargo and Moorhead.

05054020 RED RIVER OF THE NORTH BELOW FARGO, ND

LOCATION.--Lat 46°55'50", long 96°47'05", in SW¼NE¼ sec.19, T.140 N., R.48 W., Cass County, Hydrologic Unit 09020104, at bridge on county highway 2 mi (3.2 km) north of North Dakota State University campus in Fargo, and 12 mi (19 km) above mouth of Sheyenne River.

DRAINAGE AREA.--6,820 mi² (17,660 km²), approximately.

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1973 to September 1974, October 1975 to March 1978, July 1978 to current year.
WATER TEMPERATURES: October 1973 to September 1974, October 1975 to March 1978, July 1978 to current year.

REMARKS.--Fragmentary records of specific conductance and temperature for October 1974 to September 1975 are available in the Bismarck District office. Records of discharge are given for station 05054000 Red River of the North at Fargo, N. Dak., and are unadjusted for treated sewage inflow between sites. Water-quality monitor discontinued March 1978. Daily measurements of specific conductance and temperature resumed by observer July 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,220 micromhos Nov. 7, 1976; minimum, 206 micromhos July 4, 1977.
WATER TEMPERATURES: Maximum, 31.5°C July 19, 1977; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 795 micromhos Sept. 28; minimum daily, 340 micromhos Apr. 4.
WATER TEMPERATURES: Maximum daily, 27.0°C July 14; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	COLOR (PLATINUM COBALT UNITS) (00080)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT 04...	1220	496	408	8.5	13.0	15	210	12	37	29	9.8	9
NOV 08...	1200	E395	460	--	2.0	10	220	27	39	29	13	22
DEC 04...	1230	E340	559	8.2	.0	10	270	36	49	35	17	22
JAN 10...	1000	E250	551	8.1	.0	5	240	14	45	32	16	22
FEB 06...	1630	E415	550	8.1	.5	10	280	42	52	37	13	9
MAR 04...	1600	E460	649	8.1	.0	5	320	70	59	42	16	10
29...	1330	E1380	507	7.6	1.5	30	230	53	47	28	17	13
APR 15...	1545	E1030	491	8.3	8.0	20	240	70	50	28	11	9
MAY 13...	1225	714	514	8.4	13.0	30	250	50	49	31	15	11
JUN 17...	0930	941	550	7.9	22.5	80	250	39	52	29	19	14
JUL 15...	1000	106	624	8.2	27.5	35	270	61	51	35	24	16
AUG 12...	1100	194	600	8.4	22.0	15	210	10	36	29	18	15
SEP 09...	1000	16	628	7.9	20.0	80	240	39	43	32	33	22

DATE	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)
OCT 04...	.3	14	4.4	200	25	5.6	.2	14	251	246	.34	336
NOV 08...	.4	17	4.2	190	42	7.5	.2	10	287	261	.39	309
DEC 04...	.5	23	5.6	230	61	10	.2	12	330	328	.45	372
JAN 10...	.4	22	6.0	230	54	11	.2	12	331	315	.45	213
FEB 06...	.3	18	5.4	240	60	11	.1	15	328	339	.45	353
MAR 04...	.4	22	5.9	250	86	10	.2	15	391	386	.53	481
29...	.5	24	6.6	180	63	11	.1	13	315	297	.43	1150
APR 15...	.3	18	6.9	170	72	8.7	.2	11	303	293	.41	859
MAY 13...	.4	20	4.9	200	68	7.7	.1	8.1	308	304	.42	594
JUN 17...	.5	25	5.8	210	88	8.6	.1	13	356	339	.48	904
JUL 15...	.6	34	9.8	210	100	12	.4	14	393	374	.53	112
AUG 12...	.5	27	9.2	200	47	13	.3	7.4	298	283	.41	156
SEP 09...	.9	45	12	200	99	23	.4	12	430	378	.58	18.6

E - Estimated.

05054020 RED RIVER OF THE NORTH BELOW FARGO, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOSPHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUMINUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT											
04...	.06	.100	--	--	--	70	--	--	--	--	--
NOV											
08...	.40	.090	--	--	--	80	--	--	--	--	--
DEC											
04...	.02	.160	--	--	--	60	--	--	--	--	--
JAN											
10...	.15	.180	--	--	--	70	--	--	--	--	--
FEB											
06...	.26	.120	--	--	--	80	--	--	--	--	--
MAR											
04...	.24	.100	--	--	--	90	--	--	--	--	--
29...	.62	.260	--	--	--	80	--	--	--	--	--
APR											
15...	.50	.130	10	2	200	80	<1	10	21	2	20
MAY											
13...	.06	.060	--	--	--	90	--	--	--	--	--
JUN											
17...	.23	.130	--	--	--	100	--	--	--	--	--
JUL											
15...	.37	.410	--	--	--	120	--	--	--	--	--
AUG											
12...	.58	.120	20	6	200	90	1	10	<3	4	<10
SEP											
09...	.71	.440	--	--	--	130	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRONTIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT											
04...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	--	--	--	--	--	--	--	--	--	--	--
FEB											
06...	--	--	--	--	--	--	--	--	--	--	--
MAR											
04...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
APR											
15...	0	20	10	.0	<10	7	0	140	1.0	20	.00
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
JUN											
17...	--	--	--	--	--	--	--	--	--	--	--
JUL											
15...	--	--	--	--	--	--	--	--	--	--	--
AUG											
12...	1	30	2	.1	<10	7	0	160	5.0	7	.00
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

05054020 RED RIVER OF THE NORTH BELOW FARGO, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	410	450	525	540	560	565	400	530	520	565	530	590
2	405	455	525	535	515	560	345	520	525	565	520	590
3	400	450	535	550	505	540	345	520	525	555	500	615
4	405	460	550	545	505	560	340	525	505	560	485	570
5	410	460	545	550	510	525	360	530	575	565	500	570
6	400	465	540	540	510	520	420	520	580	580	525	580
7	400	460	530	515	540	530	425	530	530	585	515	585
8	405	445	545	535	535	545	445	525	520	580	495	585
9	400	445	520	510	540	540	450	530	525	655	495	620
10	395	460	500	510	510	540	475	525	520	630	480	625
11	445	455	505	500	515	520	475	530	465	630	470	650
12	430	485	530	505	500	540	495	540	515	650	495	570
13	440	480	580	490	500	550	490	520	505	670	495	565
14	440	480	580	490	535	560	500	505	520	670	460	570
15	445	490	530	490	540	540	480	515	520	610	480	540
16	435	480	535	515	540	555	495	495	535	600	495	580
17	425	485	550	510	550	550	500	505	530	625	550	570
18	435	480	555	475	550	560	540	490	530	635	565	560
19	425	475	540	505	535	590	540	500	535	600	560	630
20	430	480	540	520	585	595	530	500	590	585	460	635
21	420	485	465	515	560	540	535	500	585	580	480	710
22	435	480	490	500	530	490	530	515	545	560	490	700
23	435	465	515	495	540	470	530	515	540	560	550	700
24	440	460	500	515	575	475	515	520	545	695	555	705
25	465	480	515	550	580	500	520	510	565	690	565	725
26	450	475	525	560	570	575	520	520	565	660	525	730
27	450	470	525	560	540	560	515	525	560	620	520	780
28	460	480	515	555	535	550	515	520	565	595	540	795
29	460	500	520	580	540	510	520	520	560	560	580	790
30	465	500	520	590	---	490	530	565	555	555	590	775
31	425	---	520	575	---	485	---	540	---	535	585	---
MEAN	429	471	528	527	536	536	476	520	539	604	518	640

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.5	4.5	.5	.5	.5	.5	2.0	17.0	21.5	21.5	23.5	16.5
2	15.0	4.0	.5	.5	.5	.5	2.0	18.0	21.5	22.0	23.5	16.5
3	15.0	4.5	.5	.5	.5	.5	1.5	18.5	21.0	23.0	23.0	18.0
4	14.5	4.5	1.0	.0	.5	.5	2.0	18.5	20.5	23.5	22.0	18.0
5	14.0	4.0	.5	.0	.5	.0	2.5	19.5	20.5	24.0	20.5	18.5
6	12.5	4.0	.5	.0	.5	.0	3.5	18.5	20.5	24.5	22.0	20.0
7	11.0	4.0	.5	.0	.5	.0	4.0	15.5	20.0	24.0	20.5	22.5
8	11.0	3.0	.5	.0	.5	.0	4.0	14.5	19.5	24.0	22.0	23.0
9	10.5	1.0	.5	.0	.0	.0	4.0	15.0	19.5	25.5	22.0	20.5
10	10.0	1.0	.5	.0	.0	.0	4.5	14.0	19.5	26.0	22.5	18.5
11	10.0	.5	.5	.0	.0	.0	5.0	14.0	20.0	26.0	22.0	17.5
12	9.0	.5	.5	.0	.0	.0	5.5	14.0	20.5	26.5	21.5	18.0
13	8.5	1.0	.5	.0	.0	.0	6.0	13.5	20.5	26.5	20.5	16.5
14	9.0	1.5	.5	.0	.0	.5	7.0	13.5	21.0	27.0	20.5	16.0
15	9.0	3.0	.5	.0	.5	.5	8.0	13.5	21.0	26.0	21.5	15.5
16	9.0	2.5	.5	.0	.5	.5	8.5	14.5	21.0	25.5	20.5	14.0
17	8.5	2.5	.5	.0	.5	.5	9.0	15.0	20.5	25.0	20.0	13.5
18	8.5	3.0	1.0	.0	.5	.5	10.0	16.0	20.5	25.0	20.0	13.0
19	8.5	3.0	1.0	.0	.5	1.0	12.0	16.0	20.0	24.5	21.5	12.5
20	9.0	2.0	1.5	.0	.5	1.0	14.0	17.5	20.5	24.0	22.5	12.5
21	8.5	1.5	2.0	.0	.5	1.0	15.0	18.5	22.0	24.0	20.5	12.0
22	8.0	1.5	2.5	.0	.0	2.0	16.5	19.0	23.0	23.5	21.0	12.5
23	8.0	1.0	3.0	.0	.0	2.0	16.0	20.0	24.5	24.0	22.0	13.0
24	8.5	.5	3.0	.0	.0	2.5	15.5	21.0	24.5	24.5	24.5	12.0
25	8.5	.5	2.5	.0	.0	2.0	15.0	21.5	25.5	24.5	24.0	11.5
26	8.0	.5	2.0	.0	.0	2.0	15.0	22.0	25.0	24.0	20.5	12.0
27	8.5	1.0	1.0	.0	.0	1.5	15.5	22.5	24.5	24.0	18.5	13.0
28	8.5	.5	1.0	.0	.0	2.0	15.5	23.0	24.0	23.5	19.5	14.0
29	8.0	.5	1.0	.0	.0	2.5	16.0	22.5	22.0	24.0	19.5	14.5
30	8.0	1.0	1.0	.0	---	2.0	16.5	22.0	21.5	24.0	18.0	16.5
31	7.5	---	1.0	.0	---	2.0	---	22.0	---	24.0	17.0	---
MEAN	10.0	2.0	1.0	.0	.5	1.0	9.0	18.0	21.5	24.5	21.0	15.5

05054500 SHEYENNE RIVER ABOVE HARVEY, ND

LOCATION.--Lat 47°42'10", long 99°56'55", in SW¼SE¼ sec.24, T.149 N., R.73 W., Wells County, Hydrologic Unit 09020202, on right bank just downstream from county road, and 4.5 mi (7.2 km) south of Harvey.

DRAINAGE AREA.--424 mi² (1,098 km²), of which about 270 mi² (700 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1955 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,547.30 ft (471.617 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--25 years, 6.21 ft³/s (0.176 m³/s), 4,500 acre-ft/yr (5.55 hm³/yr); median of yearly mean discharges, 4.5 ft³/s (0.13 m³/s), 3,260 acre-ft/yr (4.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,000 ft³/s (28.3 m³/s) Apr. 20, 1979, gage height, 9.45 ft (2.880 m); maximum gage height, 10.30 ft (3.139 m) Apr. 1, 1971, backwater from ice; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 ft³/s (0.71 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
aMar. 19	--	30	0.85	Backwater from ice		Aug. 20	2200	*34	0.96	6.33	1.929
aApr. 1	--	30	.85	Backwater from ice							

Minimum daily discharge, 0.32 ft³/s (0.009 m³/s) July 31, Aug. 1.

a - About.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	1.8	1.6	1.2	.50	.40	25	9.0	.96	1.1	.32	16
2	1.6	1.8	1.6	1.2	.50	.40	25	9.0	.91	.96	.47	12
3	.50	1.9	1.6	1.1	.50	.40	24	9.0	.91	.81	.53	7.1
4	.48	1.9	1.6	1.1	.50	.40	23	8.5	2.5	.76	.81	8.3
5	.52	2.1	1.6	1.1	.50	.40	23	7.8	8.3	.67	.96	9.2
6	.61	2.0	1.5	1.1	.50	.40	22	7.3	9.2	.71	1.3	6.5
7	.67	2.0	1.5	1.1	.50	.40	22	6.7	4.6	.67	1.6	4.1
8	.71	1.9	1.5	1.0	.50	.50	22	5.7	3.8	.76	1.0	3.1
9	.71	2.0	1.5	1.0	.50	.50	21	5.4	3.2	.86	1.4	2.4
10	.78	2.0	1.5	1.1	.50	.50	21	4.9	2.4	.59	2.8	1.8
11	1.0	2.0	1.5	1.1	.50	.50	21	5.5	1.6	.50	9.0	1.6
12	1.8	2.0	1.4	1.1	.50	.50	21	4.6	1.7	.47	6.1	3.2
13	1.0	2.0	1.4	1.1	.50	.50	21	2.0	1.8	.44	5.0	3.1
14	2.0	2.0	1.4	1.2	.50	.50	21	2.2	1.8	7.2	4.0	2.6
15	1.8	2.0	1.4	1.2	.50	1.0	21	2.0	1.7	4.7	3.0	2.4
16	.99	2.0	1.4	1.0	.50	3.0	20	1.9	1.6	2.9	10	1.7
17	1.0	1.8	1.4	1.0	.50	5.0	20	3.0	1.6	2.5	16	1.6
18	1.1	1.8	1.4	1.0	.50	15	19	1.6	1.8	1.1	14	1.9
19	1.4	1.8	1.4	1.0	.50	20	19	1.3	1.6	1.2	12	2.9
20	1.7	1.8	1.4	1.0	.50	22	18	1.2	1.3	2.5	22	3.4
21	1.3	1.8	1.4	.90	.50	21	18	1.4	1.2	1.9	20	3.0
22	1.8	1.8	1.4	.80	.50	20	17	1.0	1.2	1.5	8.1	2.5
23	2.1	1.6	1.4	.80	.50	19	17	.91	1.2	.96	6.0	2.1
24	1.5	1.6	1.4	.80	.50	18	16	.81	1.1	.56	8.6	2.3
25	1.3	1.6	1.3	.70	.50	17	15	.63	.96	.53	13	2.3
26	1.4	1.6	1.3	.60	.50	17	14	.56	1.0	.53	12	2.2
27	1.6	1.6	1.3	.60	.50	18	13	.59	1.1	.56	8.9	2.0
28	1.6	1.6	1.3	.60	.50	19	12	1.3	1.2	.59	6.3	1.9
29	1.6	1.6	1.3	.60	.50	20	11	1.9	1.2	.59	4.4	2.0
30	1.7	1.6	1.3	.50	---	22	10	1.3	1.1	.50	3.5	1.9
31	1.8	---	1.2	.50	---	24	---	.91	---	.32	2.8	---
TOTAL	40.67	55.0	44.2	29.10	14.50	287.30	572	109.91	64.54	39.94	205.89	117.1
MEAN	1.31	1.83	1.43	.94	.50	9.27	19.1	3.55	2.15	1.29	6.64	3.90
MAX	2.6	2.1	1.6	1.2	.50	24	25	9.0	9.2	7.2	22	16
MIN	.48	1.6	1.2	.50	.50	.40	10	.56	.91	.32	.32	1.6
AC-FT	81	109	88	58	29	570	1130	218	128	79	408	232

CAL YR 1979 TOTAL 4581.22 MEAN 12.6 MAX 690 MIN .20 AC-FT 9090
WTR YR 1980 TOTAL 1580.15 MEAN 4.32 MAX 25 MIN .32 AC-FT 3130

05054500 SHEYENNE RIVER ABOVE HARVEY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT												
04...	1400	.44	1190	8.5	9.5	55	210	0	41	25	220	61
NOV												
09...	1400	2.0	1500	8.4	.0	40	160	0	31	20	310	80
27...	1250	1.7	1650	8.5	.5	45	200	0	40	24	320	77
JAN												
15...	1330	1.2	1330	7.7	.5	10	140	0	32	14	290	88
FEB												
07...	1345	.52	1125	7.9	.5	20	550	110	140	48	110	30
MAR												
12...	1530	E.50	1290	8.0	.5	30	120	0	28	11	310	85
24...	1900	19	480	--	.5	--	--	--	--	--	--	--
28...	1450	20	650	7.7	.0	100	130	0	28	15	89	57
APR												
04...	1110	23	700	--	.0	--	--	--	--	--	--	--
MAY												
02...	1430	8.9	1650	8.0	20.0	60	330	0	45	52	290	65
JUN												
12...	1405	1.7	1820	8.9	25.5	200	220	0	32	33	370	78
19...	1400	1.6	1220	--	20.0	--	--	--	--	--	--	--
JUL												
24...	1600	.55	1550	8.8	26.0	160	140	0	22	21	340	83
AUG												
14...	1210	3.4	1500	8.2	19.0	140	150	0	25	21	310	81
SEP												
12...	1350	3.3	1350	8.3	15.5	57	220	0	38	31	250	70

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
OCT												
04...	6.7	230	8.9	550	140	18	.3	20	837	805	1.14	.99
NOV												
09...	11	320	9.4	650	200	18	.3	32	1060	1010	1.44	5.72
27...	9.9	330	8.7	650	240	19	.3	44	1090	1090	1.48	5.06
JAN												
15...	11	300	7.0	560	190	14	.4	49	922	934	1.25	2.99
FEB												
07...	2.0	120	11	440	240	54	.2	12	890	882	1.21	1.25
MAR												
12...	13	320	5.3	530	190	17	.3	46	919	927	1.25	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
28...	3.4	100	12	190	130	9.0	.1	16	421	416	.57	22.7
APR												
04...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
02...	7.0	300	12	580	330	23	.4	8.9	1140	1110	1.55	27.4
JUN												
12...	11	380	9.1	680	270	19	.3	5.9	1240	1150	1.69	5.69
19...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
24...	12	350	11	600	250	19	.4	5.7	1100	1030	1.50	1.63
AUG												
14...	11	320	9.5	540	260	18	.3	28	1030	997	1.40	9.46
SEP												
12...	7.3	260	9.5	540	190	20	.3	28	922	892	1.25	8.22

E - Estimated.

05054500 SHEYENNE RIVER ABOVE HARVEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)
OCT											
04...	.06	.160	0	3	100	660	<1	0	<3	2	30
NOV											
09...	.05	.180	--	--	--	900	--	--	--	--	--
27...	.04	.240	--	--	--	860	--	--	--	--	--
JAN											
15...	.01	.420	--	--	--	730	--	--	--	--	--
FEB											
07...	.49	.080	--	--	--	350	--	--	--	--	--
MAR											
12...	.08	.280	--	--	--	780	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
28...	.34	.460	10	2	50	300	2	0	<3	3	160
APR											
04...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	.02	.230	--	--	--	650	--	--	--	--	--
JUN											
12...	.03	.380	--	--	--	90	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
JUL											
24...	.00	.320	--	--	--	1100	--	--	--	--	--
AUG											
14...	.02	.390	--	--	--	870	--	--	--	--	--
SEP											
12...	.01	.000	20	4	100	830	0	10	0	1	70

DATE	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT											
04...	0	90	140	.0	<10	1	0	230	1.0	4	.01
NOV											
09...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	--	--	--	--	--
FEB											
07...	--	--	--	--	--	--	--	--	--	--	--
MAR											
12...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
28...	0	50	130	.1	<10	4	0	150	1.0	<3	.01
APR											
04...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
JUN											
12...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
JUL											
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
14...	--	--	--	--	--	--	--	--	--	--	--
SEP											
12...	0	120	140	.5	0	0	0	180	3.0	20	.00

05056000 SHEYENNE RIVER NEAR WARWICK, ND

LOCATION.--Lat 47°48'20", long 98°42'57", on south quarter of line between secs.15 and 16, T.150 N., R.63 W., Eddy County, Hydrologic Unit 09020203, on left bank on downstream side of county highway bridge, and 3.3 mi (5.3 km) south of Warwick.

DRAINAGE AREA.--2,070 mi² (5,360 km²), approximately, of which about 1,310 mi² (3,390 km²) is probably noncontributing - includes 227 mi² (588 km²) in closed basins.

PERIOD OF RECORD.--October 1949 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1438: 1952(M). WSP 1728: Drainage area.

GAGE.--Water-stage recorder and rubble masonry control. Altitude of gage is 1,370 ft (418 m), by barometer.

REMARKS.--Records good. Records include flow of spring which enters below gage and just above control. Discharge measurements of spring inflow made during the water year are listed below:

Date	Discharge (ft³/s)	Discharge (m³/s)	Date	Discharge (ft³/s)	Discharge (m³/s)	Date	Discharge (ft³/s)	Discharge (m³/s)
Oct. 19	0.85	0.024	Mar. 27	1.56	0.044	July 14	0.80	0.023
Nov. 19	.93	.026	Apr. 6	1.86	.053	July 30	.79	.022
Dec. 17	1.78	.050	Apr. 17	1.27	.036	Aug. 14	1.04	.029
Feb. 6	1.14	.032	May 14	1.52	.043	Sept.23	.96	.027
Mar. 5	1.35	.038	June 12	.64	.018			

AVERAGE DISCHARGE.--31 years, 52.0 ft³/s (1.473 m³/s), 37,670 acre-ft/yr (46.4 hm³/yr); median of yearly mean discharges, 48 ft³/s (1.36 m³/s), 34,800 acre-ft/yr (43 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,660 ft³/s (132 m³/s) Apr. 14, 1969, gage height, 7.51 ft (2.289 m); maximum gage height, 7.83 ft (2.387 m) Apr. 18, 1956; no flow Aug. 7 to Sept. 1, Sept. 3-9, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 560 ft³/s (15.9 m³/s) Apr. 3, gage height, 3.81 ft (1.161 m), only peak above base of 200 ft³/s (5.66 m³/s); minimum daily, 2.3 ft³/s (0.065 m³/s) July 30 to Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	11	9.5	6.1	4.0	5.0	445	34	30	5.4	2.3	68
2	4.2	11	8.6	6.1	3.9	5.0	515	34	40	7.6	2.3	68
3	3.3	11	8.6	5.4	3.8	5.5	525	34	36	7.6	2.3	66
4	3.3	14	7.6	4.7	3.7	5.5	485	32	32	6.8	3.3	56
5	4.2	16	8.6	4.7	3.7	6.0	425	30	48	4.2	3.3	48
6	4.2	17	8.6	5.4	3.8	4.7	387	30	70	3.8	3.0	44
7	4.2	16	9.5	5.0	3.8	4.7	351	30	72	4.0	3.3	42
8	7.6	16	9.5	5.0	3.8	4.7	315	30	70	4.5	3.8	30
9	13	15	9.5	5.0	4.2	4.7	262	32	66	5.0	4.2	17
10	12	12	9.5	5.0	4.2	4.7	183	36	70	5.0	6.8	14
11	9.5	12	8.6	5.0	4.2	5.0	149	28	70	5.5	8.6	12
12	6.8	12	7.6	5.0	4.7	5.0	122	24	62	6.0	13	22
13	6.1	12	7.6	5.0	4.7	5.0	110	26	54	6.5	10	42
14	6.8	12	7.6	4.5	4.7	5.0	98	24	50	6.8	5.4	56
15	7.6	12	6.8	4.5	4.7	5.0	93	22	42	7.6	4.2	52
16	7.6	12	6.1	4.5	4.7	5.0	85	22	36	8.6	4.7	44
17	7.6	12	6.1	4.5	4.7	5.0	80	22	30	7.6	6.8	48
18	8.6	12	6.1	4.5	4.7	5.5	76	20	26	6.8	6.8	48
19	8.6	17	6.1	4.5	4.7	5.5	66	16	26	5.4	11	42
20	9.5	18	6.1	4.5	4.7	6.0	62	16	24	7.6	16	40
21	6.1	14	5.4	4.5	4.7	6.0	56	16	20	5.4	12	44
22	6.8	13	5.4	4.5	4.7	7.0	54	15	17	4.7	12	52
23	9.5	12	6.1	4.5	4.7	7.0	52	14	16	4.7	56	50
24	11	11	6.1	4.0	4.7	8.0	44	12	15	6.8	68	44
25	11	11	6.1	4.0	4.7	9.0	42	8.6	12	7.6	50	40
26	11	11	6.1	4.0	4.7	9.5	40	8.6	11	6.1	48	36
27	12	9.5	6.1	4.0	4.7	12	36	6.1	11	4.7	52	34
28	12	9.5	6.1	4.0	4.7	16	36	8.6	11	3.3	52	34
29	11	9.5	6.1	4.0	5.0	56	38	9.5	6.8	2.6	62	34
30	11	9.5	6.1	4.0	---	226	36	12	6.1	2.3	66	34
31	11	---	6.1	4.0	---	356	---	20	---	2.3	68	---
TOTAL	251.3	380.0	223.9	144.4	128.0	815.0	5268	672.4	1079.9	172.8	669.1	1261
MEAN	8.11	12.7	7.22	4.66	4.41	26.3	176	21.7	36.0	5.57	21.6	42.0
MAX	13	18	9.5	6.1	5.0	356	525	36	72	8.6	68	68
MIN	3.3	9.5	5.4	4.0	3.7	4.7	36	6.1	6.1	2.3	2.3	12
AC-FT	498	754	444	286	254	1620	10450	1330	2140	343	1330	2500

CAL YR 1979 TOTAL 38569.3 MEAN 106 MAX 2550 MIN 3.0 AC-FT 76500
WTR YR 1980 TOTAL 11065.8 MEAN 30.2 MAX 525 MIN 2.3 AC-FT 21950

05056100 MAUVAIS COULEE NEAR CANDO, ND

LOCATION.--Lat 48°26'53", long 99°06'08", in SE¼NE¼SE¼ sec.1, T.157 N., R.66 W., Towner County, Hydrologic Unit 09020201, on left bank 0.3 mi (0.5 km) upstream from highway bridge, about 4 mi (6 km) upstream from West Fork, 5.5 mi (8.8 km) southeast of Cando, and 7 mi (11 km) northeast of Maza.

DRAINAGE AREA.--387 mi² (1,000 km²), of which about 10 mi² (26 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,445 ft (440.4 m), from topographic map. Prior to July 2, 1957, nonrecording gage at present site and datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--24 years, 19.1 ft³/s (0.541 m³/s), 13,840 acre-ft/yr (17.1 hm³/yr); median of yearly mean discharges, 10 ft³/s (0.28 m³/s), 7,200 acre-ft/yr (8.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,660 ft³/s (75.3 m³/s) Apr. 25, 1979, gage height, 11.18 ft (3.408 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 16, 1954, reached a stage of 9.83 ft (2.996 m), and flood of Apr. 20, 1956, reached a stage of 10.71 ft (3.264 m), from floodmarks set by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31 ft³/s (0.88 m³/s) Apr. 19, gage height, 3.41 ft (1.039 m), only peak above base of 25 ft³/s (0.71 m³/s); maximum gage height, 3.58 ft (1.091 m) Sept. 12, backwater from beaver dam; no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.03	.02	.01	.00	.00	.00	6.8	.04	.02	.01	4.2
2	.01	.03	.03	.01	.00	.00	.00	5.8	.05	.02	.01	4.2
3	.01	.03	.03	.01	.00	.00	.09	4.9	.05	.02	.01	4.4
4	.01	.03	.03	.01	.00	.00	1.1	4.4	.05	.02	.01	4.6
5	.01	.03	.03	.01	.00	.00	.54	3.8	.06	.02	.01	4.8
6	.01	.03	.03	.01	.00	.00	2.2	4.2	.08	.02	.01	4.8
7	.01	.03	.03	.01	.00	.00	9.8	3.6	.08	.02	.01	4.8
8	.01	.03	.03	.01	.00	.00	8.0	2.7	.10	.02	.01	4.6
9	.01	.03	.03	.00	.00	.00	7.7	2.2	.10	.02	.01	4.4
10	.01	.04	.03	.00	.00	.00	6.4	2.0	.08	.01	.01	4.2
11	.01	.04	.03	.00	.00	.00	5.9	1.3	.10	.00	.01	4.0
12	2.3	.04	.02	.00	.00	.00	5.4	1.8	.08	.00	.01	9.0
13	.62	.03	.02	.00	.00	.00	4.2	1.7	.07	.00	.01	7.0
14	.78	.03	.02	.00	.00	.00	3.1	3.8	.09	.00	.01	5.5
15	.38	.03	.03	.00	.00	.00	1.9	1.7	.07	.00	.01	5.0
16	.38	.02	.02	.00	.00	.00	1.1	.63	.07	.00	.01	4.8
17	1.1	.02	.01	.00	.00	.00	3.8	.34	.09	.00	.20	4.6
18	1.3	.02	.02	.00	.00	.00	18	.25	.07	.00	.20	4.8
19	.37	.02	.02	.00	.00	.00	28	.12	.06	.00	.20	5.0
20	.51	.02	.02	.00	.00	.00	30	.03	.05	.02	.80	5.5
21	.12	.02	.01	.00	.00	.00	28	.03	.03	.04	1.5	6.0
22	.08	.02	.01	.00	.00	.00	26	.00	.02	.02	1.5	6.2
23	.05	.03	.01	.00	.00	.00	24	.00	.02	.03	1.6	6.2
24	.05	.03	.01	.00	.00	.00	21	.00	.02	.03	1.7	6.1
25	.09	.03	.01	.00	.00	.00	18	.00	.02	.03	3.0	6.1
26	.18	.03	.01	.00	.00	.00	14	.00	.02	.03	4.0	6.0
27	.43	.03	.01	.00	.00	.00	12	.00	.02	.02	4.0	5.9
28	.63	.03	.01	.00	.00	.00	11	.00	.02	.02	4.2	5.8
29	.94	.02	.01	.00	.00	.00	9.4	.00	.02	.01	4.4	5.7
30	1.3	.02	.01	.00	---	.00	7.7	.00	.02	.01	4.4	5.6
31	.89	---	.01	.00	---	.00	---	.00	---	.01	4.2	---
TOTAL	12.61	.84	.61	.08	.00	.00	308.33	52.10	1.65	.46	36.06	159.8
MEAN	.41	.028	.020	.003	.000	.000	10.3	1.68	.055	.015	1.16	5.33
MAX	2.3	.04	.03	.01	.00	.00	30	6.8	.10	.04	4.4	9.0
MIN	.01	.02	.01	.00	.00	.00	.00	.00	.02	.00	.01	4.0
AC-FT	25	1.7	1.2	.2	.00	.00	612	103	3.3	.9	72	317

CAL YR 1979 TOTAL 22787.98 MEAN 62.4 MAX 2580 MIN .00 AC-FT 45200
WTR YR 1980 TOTAL 572.54 MEAN 1.56 MAX 30 MIN .00 AC-FT 1140

05056100 MAUVAIS COULEE NEAR CANDO, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT 19...	0925	.09	1750	--	6.0	--	--	--	--
NOV 20...	1105	.02	1550	7.8	1.5	840	440	170	100
DEC 18...	1200	.02	2190	--	.5	--	--	--	--
APR 05...	1430	.50	912	7.5	1.0	380	250	80	44
16...	1515	.93	712	--	3.0	--	--	--	--
MAY 02...	0945	6.0	878	7.7	16.5	380	170	83	42
JUN 11...	1400	.12	1220	8.7	22.5	550	280	110	67
AUG 13...	1325	.01	1180	8.7	24.0	460	270	74	67
SEP 24...	1945	6.1	810	7.8	9.5	370	72	82	40

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT 19...	--	--	--	--	--	--	--	--	--
NOV 20...	94	19	1.4	8.9	481	0	395	12	610
DEC 18...	--	--	--	--	--	--	--	--	--
APR 05...	40	18	.9	14	159	0	130	8.0	300
16...	--	--	--	--	--	--	--	--	--
MAY 02...	39	18	.9	15	261	0	214	8.3	230
JUN 11...	72	22	1.3	12	327	0	268	1.0	410
AUG 13...	90	29	1.8	9.8	236	0	194	.8	400
SEP 24...	38	18	.9	8.6	363	0	298	9.2	140

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT 19...	--	--	--	--	--	--	--	--	--
NOV 20...	44	.3	16	1280	1.84	.07	100	40	300
DEC 18...	--	--	--	--	--	--	--	--	--
APR 05...	32	.1	12	606	.90	.89	260	700	1420
16...	--	--	--	--	--	--	--	--	--
MAY 02...	26	.1	11	577	.77	9.19	0	70	160
JUN 11...	37	.2	8.6	879	1.20	.31	0	10	20
AUG 13...	34	.3	8.2	801	1.26	.02	180	30	90
SEP 24...	20	.2	36	545	.80	9.63	30	60	60

05056200 EDMORE COULEE NEAR EDMORE, ND

LOCATION.--Lat 48°20'14", long 98°39'33", in NW¼ sec.17, T.156 N., R.62 W., Ramsey County, Hydrologic Unit 09020201, on right bank 50 ft (15 m) upstream from bridge on county highway, 11 mi (18 km) southwest of Edmore, and about 13 mi (21 km) upstream from Sweetwater Lake.

DRAINAGE AREA.--382 mi² (989 km²), of which about 100 mi² (259 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to June 1956, June 1957 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Prior to June 26, 1957, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--23 years (1957-80), 13.7 ft³/s (0.388 m³/s), 9,920 acre-ft/yr (12.2 hm³/yr); median of yearly mean discharges, 9.2 ft³/s (0.26 m³/s), 6,700 acre-ft/yr (8.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,110 ft³/s (31.4 m³/s) Apr. 25, 1979, gage height, 7.31 ft (2.228 m); no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26 ft³/s (0.736 m³/s) Apr. 13, gage height, 3.38 ft (1.030 m), no peak above base of 50 ft³/s (1.42 m³/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.52	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	6.4	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	8.2	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	9.2	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	23	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	25	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	26	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	26	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	26	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	25	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	23	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	22	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	18	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	18	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	17	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	13	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	10	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	7.8	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	5.8	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	4.5	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	3.6	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	2.7	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	2.1	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	362.30	3.16	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	12.1	.10	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	26	1.5	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	719	6.3	.00	.00	.00	.00

CAL YR 1979 TOTAL 13303.75 MEAN 36.4 MAX 1090 MIN .00 AC-FT 26390
WTR YR 1980 TOTAL 365.46 MEAN 1.00 MAX 26 MIN .00 AC-FT 725

05056200 EDMORE COULEE NEAR EDMORE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
APR									
08...	1245	8.2	605	7.7	1.0	210	140	51	20
10...	1045	28	728	--	1.5	--	--	--	--
15...	1605	26	815	--	7.5	--	--	--	--
29...	1530	2.8	1060	7.6	17.0	360	130	86	35

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
APR									
08...	34	24	1.0	15	89	0	73	2.8	190
10...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
29...	88	33	1.9	13	285	0	234	11	270

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR									
08...	18	.1	7.7	391	.59	9.61	30	30	140
10...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
29...	40	.2	15	685	.96	5.31	60	50	80

05056225 WEBSTER COULEE AT WEBSTER, ND

LOCATION.--Lat 48°16'55", long 98°53'45", in SW¼SW¼SW¼ sec.33, T.156 N., R.64 W., Ramsey County, Hydrologic Unit 09020201, on left bank 0.8 mi (1.3 km) west of Webster.

DRAINAGE AREA.--About 670 mi² (1,730 km²) of which about 280 mi² (720 km²) is probably noncontributing.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--October 1979 to September 1980.

GAGE.--Nonrecording gage. Altitude of gage is 1,450 ft (442 m), from topographic map.

REMARKS.--Gage heights observed during periods of flow only.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 8.86 ft (2.701 m) Apr. 2, backwater from ice; minimum not observed.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	6.82	---			---
2							8.86	6.80	---			---
3							8.40	6.78	---			---
4							8.36	6.76	---			---
5							8.30	6.72	---			---
6							8.20	6.60	---			---
7							7.90	6.58	---			---
8							7.76	6.58	---			---
9							7.38	6.56	---			---
10							7.36	6.56	5.98			---
11							7.30	6.56	---			---
12							7.20	6.54	5.84			---
13							7.22	6.55	---			---
14							7.28	6.54	5.72			---
15							7.28	6.52	---			---
16							7.32	6.50	---			---
17							7.30	6.48	---			---
18							7.26	6.44	---			---
19							7.16	6.40	---			---
20							7.16	6.38	5.44			---
21							7.08	6.34	---			---
22							6.98	6.30	---			---
23							6.94	6.26	---			---
24							6.88	6.20	---			---
25							6.86	---	---			6.91
26							6.82	---	---			---
27							6.88	---	5.18			---
28							6.88	---	---			---
29							6.88	---	---			---
30							6.86	---	---			---
31							---	---	---			---
TOTAL	---	---	---	---	---	---	---	---	---			---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

05056225 WEBSTER COULEE AT WEBSTER, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
APR									
05...	1200	E9.8	729	--	1.0	--	--	--	--
08...	1615	5.4	762	7.8	1.0	280	190	64	29
10...	0920	3.7	760	--	1.0	--	--	--	--
15...	1815	2.5	968	--	10.0	--	--	--	--
MAY									
01...	1730	.01	1720	8.3	26.5	770	380	150	96
JUN									
10...	1420	.04	1220	8.2	28.0	490	240	100	58
SEP									
25...	1150	.20	848	7.8	8.0	340	140	78	35

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
APR									
05...	--	--	--	--	--	--	--	--	--
08...	41	23	1.1	15	112	0	92	2.8	220
10...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
MAY									
01...	120	25	1.9	27	478	0	392	3.8	590
JUN									
10...	78	25	1.5	21	307	0	252	3.1	380
SEP									
25...	54	25	1.3	13	248	0	203	6.3	220

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR									
05...	--	--	--	--	--	--	--	--	--
08...	26	.1	15	507	.75	8.08	230	50	660
10...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
MAY									
01...	47	.2	13	1280	1.77	.04	100	40	370
JUN									
10...	30	.2	14	835	1.22	.10	30	10	640
SEP									
25...	31	.1	34	590	.87	.35	100	40	0

E - Estimated.

05056239 STARKWEATHER COULEE NEAR WEBSTER, ND

LOCATION.--Lat 48°19'13", long 98°56'23", in NW¼SW¼NW¼ sec.19, T.156 N., R.64 W., Ramsey County, Hydrologic Unit 09020201, on bridge 3.8 mi (6.1 km) northwest of Webster.

DRAINAGE AREA.--About 310 mi^2 (800 km^2) of which about 100 mi^2 (260 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to September 1980.

GAGE.--Nonrecording gage.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 44 ft^3/s (1.25 m^3/s) Apr. 7, gage height, 5.10 ft (1.554 m); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	44	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	33	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	30	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	25	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	25	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	25	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	27	.00	.00	.00	.00	.50
14	.00	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	3.0
15	.00	.00	.00	.00	.00	.00	15	.00	.00	.00	.00	2.9
16	.00	.00	.00	.00	.00	.00	10	.00	.00	.00	.00	2.8
17	.00	.00	.00	.00	.00	.00	6.0	.00	.00	.00	.00	2.8
18	.00	.00	.00	.00	.00	.00	3.4	.00	.00	.00	.00	2.5
19	.00	.00	.00	.00	.00	.00	1.6	.00	.00	.00	.00	2.5
20	.00	.00	.00	.00	.00	.00	1.6	.00	.00	.00	.00	2.5
21	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00	2.4
22	.00	.00	.00	.00	.00	.00	.52	.00	.00	.00	.00	2.4
23	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	2.4
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.3
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.2
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.8
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.5
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	1.0
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	282.93	.00	.00	.00	.00	38.70
MEAN	.000	.000	.000	.000	.000	.000	9.43	.000	.000	.000	.000	1.29
MAX	.00	.00	.00	.00	.00	.00	44	.00	.00	.00	.00	3.0
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	561	.00	.00	.00	.00	77

WTR YR 1980 TOTAL 321.63 MEAN .88 MAX 44 MIN .00 AC-FT 638

RED RIVER OF THE NORTH BASIN

05056239 STARKWEATHER COULEE NEAR WEBSTER, ND

WATER-QUALITY RECORDS

PERIOD OF RECORD.—October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
APR									
02...	1100	.02	432	--	.0	--	--	--	--
05...	1100	.18	458	7.9	4.0	180	120	43	18
08...	1415	37	695	--	--	--	--	--	--
10...	0840	26	732	8.0	2.0	290	150	72	27
15...	1745	12	678	--	13.0	--	--	--	--
SEP									
25...	1410	2.4	880	8.2	8.5	270	56	66	26

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
APR									
02...	--	--	--	--	--	--	--	--	--
05...	14	14	.5	6.8	78	0	64	1.6	110
08...	--	--	--	--	--	--	--	--	--
10...	28	17	.7	11	172	0	141	2.8	180
15...	--	--	--	--	--	--	--	--	--
SEP									
25...	20	13	.5	8.1	263	0	216	2.7	93

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR									
02...	--	--	--	--	--	--	--	--	--
05...	13	.1	14	289	.44	.16	0	30	50
08...	--	--	--	--	--	--	--	--	--
10...	21	.2	23	468	.69	35.7	190	30	10
15...	--	--	--	--	--	--	--	--	--
SEP									
25...	15	.1	36	395	.58	2.77	30	40	0

05056390 LITTLE COULEE NEAR BRINSMADE, ND

LOCATION.--Lat 48°11'15", long 99°14'34", in SW¼ sec.2, T.154 N., R.67 W., Benson County, Hydrologic Unit 09020201, on right bank 100 ft (30 m) downstream from bridge on township road, 0.5 mi (0.8 km) downstream from Silver Lake, and 4 mi (6 km) east of Brinsmade.

DRAINAGE AREA.--350 mi² (906 km²), of which 160 mi² (414 km²) is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,435 ft (437 m), from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--5 years, 8.96 ft³/s (0.254 m³/s), 58,160 acre-ft/yr (71.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 425 ft³/s (12.1 m³/s) May 1, 1979, gage height, 10.43 ft (3.179 m); no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4.9 ft³/s (0.139 m³/s) Apr. 22, gage height, 6.81 ft (2.076 m); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	1.0	1.8	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.85	1.7	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.70	1.6	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.58	1.5	.04	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.43	1.5	.22	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.31	1.4	.08	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.22	1.4	.04	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.11	1.1	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.05	.46	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.04	.40	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.02	.70	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	.25
13	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.02
14	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.03	.05	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	1.3	.05	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	3.6	.05	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	4.5	.04	.00	.00	.00	.04
20	.00	.00	.00	.00	.00	.00	4.8	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	4.4	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	4.3	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	3.5	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	3.2	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	3.0	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	2.9	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	2.5	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.50	2.2	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.80	2.1	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	1.0	1.8	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	1.3	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	3.60	48.44	14.19	.38	.00	.00	.31
MEAN	.000	.000	.000	.000	.000	.12	1.61	.46	.013	.000	.000	.010
MAX	.00	.00	.00	.00	.00	1.3	4.8	1.8	.22	.00	.00	.25
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	7.1	96	28	.8	.00	.00	.6

CAL YR 1979 TOTAL 13069.94 MEAN 35.8 MAX 375 MIN .00 AC-FT 25920
WTR YR 1980 TOTAL 66.92 MEAN .18 MAX 4.8 MIN .00 AC-FT 133

05056390 LITTLE COULEE NEAR BRINSMADE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to September 1976, October 1977 to current year.
WATER TEMPERATURES: October 1975 to September 1976, October 1977 to current year.

REMARKS.--No flow Oct. 1 to Mar. 27, Apr. 12-15, May 20 to June 3, June 8 to Sept. 11, Sept. 14-18 and Sept. 20-30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,010 micromhos May 12, 1978; minimum daily, 220 micromhos Apr. 6, 1978.
WATER TEMPERATURES: Maximum daily, 30.0°C June 15, 1979; minimum daily, 0.0°C Apr. 2, 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,600 micromhos Apr. 9, 11; minimum daily, 375 micromhos Apr. 19.
WATER TEMPERATURES: Maximum daily, 25.0°C May 3; minimum daily, 0.0°C on Apr. 2.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
MAR												
31...	1330	1.6	780	--	.5	--	--	--	--	--	--	--
APR												
02...	0835	.90	900	--	.0	--	--	--	--	--	--	--
05...	1630	.38	1270	7.3	8.0	40	490	400	120	45	66	21
09...	1220	.04	1450	--	6.0	--	--	--	--	--	--	--
16...	1640	.04	1570	8.1	13.0	30	680	510	170	61	78	19
MAY												
02...	1425	1.7	860	7.9	17.5	20	320	68	73	33	52	25

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
MAR												
31...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
05...	1.3	100	34	89	460	40	.1	11	922	840	1.25	.95
09...	--	--	--	--	--	--	--	--	--	--	--	--
16...	1.3	120	40	170	660	51	.2	18	1250	1180	1.70	.14
MAY												
02...	1.3	71	19	250	160	23	.2	16	563	527	.77	2.58

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
MAR											
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
05...	2.2	.410	20	6	60	130	<1	0	<3	4	30
09...	--	--	--	--	--	--	--	--	--	--	--
16...	.30	.260	--	--	--	160	--	--	--	--	--
MAY											
02...	.12	.100	--	--	--	150	--	--	--	--	--

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
MAR											
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
05...	0	50	260	.0	13	4	1	370	2.0	<3	.00
09...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--

05056390 LITTLE COULEE NEAR BRINSMADE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---	750	825				
2						---	900	815				
3						---	1200	875				
4						---	1350	850				
5						---	1300	825				
6						---	1300	825				
7						---	1350	825				
8						---	1400	825				
9						---	1600	850				
10						---	1550	1000				
11						---	1600	1050				
12						---	---	1000				
13						---	---	1000				
14						---	---	1000				
15						---	---	1100				
16						---	---	1100				
17						---	675	1100				
18						---	430	1100				
19						---	375	1100				
20						---	380	---				
21						---	420	---				
22						---	700	---				
23						---	800	---				
24						---	800	---				
25						---	800	---				
26						---	800	---				
27						---	750	---				
28						---	825	---				
29						---	815	---				
30						---	815	---				
31						700	---	---				
MEAN						700	947	951				

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---	2.0	19.0				
2						---	.0	22.5				
3						---	7.0	25.0				
4						---	8.0	18.5				
5						---	5.0	16.5				
6						---	2.5	13.0				
7						---	4.0	9.0				
8						---	4.0	13.0				
9						---	6.0	10.0				
10						---	11.0	12.0				
11						---	8.0	11.0				
12						---	---	13.0				
13						---	---	10.5				
14						---	---	14.0				
15						---	---	16.0				
16						---	---	14.0				
17						---	12.0	21.0				
18						---	13.0	20.0				
19						---	11.0	21.0				
20						---	15.0	---				
21						---	15.0	---				
22						---	12.0	---				
23						---	12.0	---				
24						---	12.0	---				
25						---	14.0	---				
26						---	14.0	---				
27						---	16.0	---				
28						---	17.0	---				
29						---	18.0	---				
30						---	21.5	---				
31						2.0	---	---				
MEAN						2.0	10.5	15.5				

05056400 BIG COULEE NEAR CHURCHS FERRY, ND

LOCATION.--Lat 48°10'40", long 99°13'15", in NW¼NW¼ sec.12, T.154 N., R.67 W., Benson County, Hydrologic Unit 09020201, on right bank on downstream side of bridge on U.S. Highway 281, 1 mi (1.6 km) downstream from Little Coulee, and 6 mi (10 km) south of Churchs Ferry.

DRAINAGE AREA.--2,510 mi² (6,500 km²), approximately, of which about 690 mi² (1,790 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1950 to current year. Prior to October 1960, published as Mauvais Coulee near Churchs Ferry.

GAGE.--Water-stage recorder. Datum of gage is 1,432.65 ft (436.672 m) National Geodetic Vertical Datum of 1929. Prior to June 21, 1950, reference marks, and June 21, 1950, to July 17, 1956, nonrecording gage at former bridge on U.S. Highway 281, 0.1 mi (0.2 km) upstream at datum 0.70 ft (0.213 km) higher.

REMARKS.--Records fair. Flow affected by many lakes on the mainstem and tributaries.

AVERAGE DISCHARGE.--30 years, 42.8 ft³/s (1.212 m³/s), 31,010 acre-ft/yr (38.2 hm³/yr); median of yearly mean discharges, 8.4 ft³/s (0.24 m³/s), 6,090 acre-ft/yr (7.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,420 ft³/s (40.2 m³/s) May 6, 1979, gage height, 7.59 ft (2.313 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 71 ft³/s (2.01 m³/s) Apr. 12, gage height, 2.40 ft (0.731 m); maximum gage height, 3.00 ft (0.914 m) Mar. 31, backwater from ice, no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	20	4.0	1.7	.00	.00	7.7	13	.60	.00	.00	1.2
2	16	20	4.0	1.1	.00	.00	5.3	17	.45	.00	.00	1.3
3	19	15	4.0	.98	.00	.00	9.0	13	.21	.00	.00	1.1
4	22	17	4.0	.90	.00	.00	12	11	1.8	.00	.03	.72
5	14	20	4.0	.70	.00	.00	16	11	4.1	.00	.10	.66
6	24	20	4.0	.50	.00	.00	28	14	5.0	.00	.11	.63
7	18	20	4.0	.30	.00	.00	16	12	3.8	.00	.10	.57
8	16	19	4.0	.00	.00	.00	5.8	11	3.8	.00	.09	.36
9	18	19	4.0	.00	.00	.00	8.6	6.7	1.7	.00	.07	.21
10	16	19	4.0	.00	.00	.00	13	4.6	.72	.00	.12	.21
11	16	19	4.0	.00	.00	.00	42	9.5	.41	.00	.18	.30
12	19	18	4.0	.00	.00	.00	47	6.4	.11	.00	.14	2.0
13	18	18	4.0	.00	.00	.00	23	4.6	.07	.00	.13	5.5
14	17	18	3.5	.00	.00	.00	22	4.1	.04	.00	.10	8.7
15	16	18	3.8	.00	.00	.00	23	2.8	.02	.00	.07	6.9
16	15	18	3.5	.00	.00	.00	21	4.4	.01	.00	.11	3.9
17	19	18	3.5	.00	.00	.00	23	3.2	.00	.00	1.2	3.3
18	14	15	3.6	.00	.00	.00	24	3.2	.00	.00	1.0	3.2
19	14	11	4.2	.00	.00	.00	28	14	.01	.00	1.0	3.2
20	12	12	4.2	.00	.00	.00	26	12	.00	.00	1.8	3.9
21	15	8.9	3.4	.00	.00	.00	23	4.1	.00	.00	3.2	4.2
22	18	7.3	3.0	.00	.00	.00	30	2.6	.00	.01	5.5	4.1
23	16	6.4	2.9	.00	.00	.00	27	2.2	.00	.01	6.7	4.2
24	13	5.1	3.1	.00	.00	.00	21	.66	.00	.02	5.0	4.2
25	12	5.0	3.1	.00	.00	.00	20	.45	.00	.02	3.0	3.7
26	11	5.0	2.9	.00	.00	.00	19	.92	.00	.01	2.0	3.2
27	7.5	4.9	2.8	.00	.00	.14	18	.45	.00	.00	1.4	2.8
28	11	3.8	2.5	.00	.00	.88	16	.41	.00	.00	1.4	2.4
29	11	4.5	2.2	.00	.00	2.1	16	.60	.00	.00	1.4	2.0
30	15	4.3	2.1	.00	---	2.3	15	.51	.00	.00	1.3	1.6
31	17	---	1.8	.00	---	7.4	---	.66	---	.00	1.1	---
TOTAL	488.5	409.2	108.1	6.18	.00	12.82	605.4	191.06	22.85	.07	38.35	80.26
MEAN	15.8	13.6	3.49	.20	.000	.41	20.2	6.16	.76	.002	1.24	2.68
MAX	24	20	4.2	1.7	.00	7.4	47	17	5.0	.02	6.7	8.7
MIN	7.5	3.8	1.8	.00	.00	.00	5.3	.41	.00	.00	.00	.21
AC-FT	969	812	214	12	.00	25	1200	379	45	.1	76	159

CAL YR 1979 TOTAL 86686.00 MEAN 237 MAX 1400 MIN .00 AC-FT 171900
WTR YR 1980 TOTAL 1962.79 MEAN 5.36 MAX 47 MIN .00 AC-FT 3890

05056500 DEVILS LAKE NEAR DEVILS LAKE, ND

LOCATION.--Lat 48°04'00", long 98°56'07", in SW¼ sec.18, T.153 N., R.64 W., Ramsey County, Hydrologic Unit 09020201, at Lakewood, on east bank of Creel Bay, 4.5 mi (7.2 km) southwest of city of Devils Lake. Creel Bay, which is 0.5 mi (0.8 km) wide, is an arm of Devils Lake and extends 2 mi (3 km) to the north of the lake.

DRAINAGE AREA.--3,130 mi² (8,110 km²), approximately, of which about 1,000 mi² (2,600 km²) is probably noncontributing.

PERIOD OF RECORD.--1867, 1879, 1883, 1887, 1890, 1896 (one gage height for each year), 1901-63 (fragmentary), 1964 to current year.

REVISED RECORDS.--WSP 1913: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.72 m) National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD. June 23, 1950, to June 6, 1963, nonrecording gage at present site and datum. See WSP 1913 for history of changes prior to June 23, 1950. Prior to October 1979 only monthend elevations were published.

REMARKS.--Elevation at gage frequently affected by wind.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation observed, 1,438.40 ft (438.424 m) in 1867, present datum; minimum observed, 1,400.87 ft (426.985 m) Oct. 24, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--The lake level was about elevation 1,446 ft (441 m) about 1830 and lower thereafter, according to the tree growth noted 1885-89. Reference is Geological Survey monograph, volume XXV, The Glacial History of Lake Agassiz by Warren Upham.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 1,426.20 ft (434.706 m) Oct. 2; minimum, 1,425.20 ft (434.401 m) Aug. 16.

MONTHEND ELEVATION, IN FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Oct. 31........	1,425.84	Jan. 31.......	1,425.86	Apr. 30........	1,426.06	July 31........	1,425.36
Nov. 30........	1,425.85	Feb. 29.......	*1,425.88	May 31........	1,425.82	Aug. 31........	1,425.34
Dec. 31........	1,425.84	Mar. 31.......	1,425.91	June 30........	1,425.58	Sept.30........	1,425.42

* Estimated

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.12	25.89	25.84	25.83	25.85	25.86	25.91	26.04	25.80	25.58	25.34	25.37
2	26.12	25.87	25.85	25.82	25.86	25.88	25.92	26.04	25.75	25.59	25.33	25.39
3	26.09	25.85	25.88	25.82	25.87	25.87	25.92	26.04	25.74	25.56	25.29	25.39
4	26.06	25.86	25.87	25.83	25.87	25.86	25.92	26.02	25.86	25.55	25.39	25.43
5	26.06	25.85	25.87	25.83	25.87	25.85	25.94	26.00	25.92	25.53	25.33	25.34
6	26.02	25.86	25.86	25.87	25.87	25.85	25.96	25.94	25.92	25.58	25.26	25.34
7	26.01	25.84	25.87	25.86	25.87	25.86	25.96	25.91	25.88	25.60	25.29	25.35
8	26.01	25.84	25.86	---	25.87	25.86	25.96	25.92	25.91	25.58	25.30	25.34
9	26.01	25.86	25.87	---	25.87	25.87	25.96	25.91	25.87	25.58	25.27	25.31
10	26.00	25.87	25.88	25.86	25.86	25.85	25.96	25.89	25.84	25.56	25.28	25.30
11	25.98	25.86	25.85	25.86	25.86	25.85	25.98	25.91	25.86	25.54	25.31	25.26
12	25.94	25.87	25.85	25.86	25.86	25.87	25.98	25.87	25.86	25.52	25.30	25.37
13	25.96	25.87	25.86	25.89	25.86	25.87	25.98	25.86	25.83	25.50	25.32	25.39
14	25.97	25.88	25.87	25.88	25.86	25.87	25.99	25.87	25.80	25.50	25.30	25.39
15	25.99	25.88	25.84	25.90	25.85	25.88	26.01	25.88	25.77	25.46	25.28	25.44
16	25.98	25.89	25.83	25.87	25.86	25.88	26.02	25.88	25.79	25.48	25.23	25.38
17	25.97	25.89	25.84	25.86	25.85	25.87	26.03	25.87	25.76	25.46	25.33	25.32
18	25.97	25.89	25.86	25.87	25.87	25.87	26.03	25.88	25.71	25.46	25.33	25.33
19	25.95	25.89	25.86	25.86	25.87	25.89	26.04	25.87	25.75	25.42	25.33	25.36
20	26.02	25.88	25.87	25.86	25.86	25.89	26.05	25.87	25.75	25.46	25.39	25.38
21	25.94	25.88	25.87	25.87	25.87	25.88	26.05	25.86	25.73	25.47	25.46	25.40
22	25.91	25.88	25.85	25.87	25.86	25.88	26.04	25.85	25.72	25.46	25.37	25.41
23	25.91	25.86	25.85	25.87	25.88	25.88	26.03	25.82	25.70	25.47	25.34	25.37
24	25.91	25.86	25.84	25.88	25.88	25.89	26.02	25.79	25.72	25.44	25.37	25.37
25	25.91	25.86	25.84	25.86	25.87	25.89	26.03	25.78	25.69	25.41	25.37	25.36
26	25.92	25.87	25.85	25.86	25.87	25.89	26.04	25.81	25.61	25.40	25.32	25.38
27	25.95	25.86	25.85	25.86	25.87	25.90	26.05	25.81	25.60	25.39	25.32	25.36
28	25.94	25.86	25.85	25.86	25.87	25.90	26.05	25.83	25.69	25.40	25.32	25.37
29	25.92	25.84	25.85	25.86	25.88	25.89	26.04	25.84	25.61	25.37	25.36	25.38
30	25.89	25.85	25.85	25.86	---	25.90	26.05	25.82	25.58	25.39	25.37	25.38
31	25.86	---	25.83	25.90	---	25.90	---	25.79	---	25.38	25.34	---
TOTAL	805.29	776.01	801.51	---	750.13	802.15	779.92	802.47	773.02	790.09	785.14	760.96
MEAN	25.98	25.87	25.86	---	25.87	25.88	26.00	25.89	25.77	25.49	25.33	25.37
MAX	26.12	25.89	25.88	---	25.88	25.90	26.05	26.04	25.92	25.60	25.46	25.44
MIN	25.86	25.84	25.83	---	25.85	25.85	25.91	25.78	25.58	25.37	25.23	25.26

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND

LOCATION.--Lat 47°26'01", long 98°01'43", in NE¼NE¼SE¼ sec.27, T.146 N., R.58 W., Griggs County, Hydrologic Unit 09020203, on right bank 150 ft (46 m) downstream from county bridge, and 5 mi (8 km) east of Cooperstown.

DRAINAGE AREA.--6,470 mi² (16,760 km²), approximately, of which about 5,200 mi² (13,470 km²) is probably noncontributing, includes 3,800 mi² (9,840 km²) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1944 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,271.761 ft (387.633 m) revised, National Geodetic Vertical Datum of 1929, Corps of Engineers benchmark. Prior to Aug. 3, 1950, nonrecording gage at site 150 ft (45.7 m) upstream at same datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--36 years, 103 ft³/s (2.917 m³/s), 74,620 acre-ft/yr (92.0 hm³/yr); median of yearly mean discharges, 82 ft³/s (2.32 m³/s) 59,400 acre-ft/yr (73 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,830 ft³/s (222 m³/s) Apr. 17, 1950, gage height, 18.69 ft (5.697 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.66 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 1	--	300	8.50	Backwater from ice		Apr. 9	0630	*750	21.2	10.57	3.222

Minimum daily discharge, 3.4 ft³/s (0.096 m³/s) Aug. 14 & 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	22	20	14	9.0	12	290	78	40	26	5.1	35
2	4.3	21	19	14	9.0	12	265	74	40	25	4.7	46
3	4.3	27	18	14	9.0	12	220	72	39	25	4.1	48
4	4.7	32	17	14	9.0	12	240	70	42	23	4.1	50
5	5.1	30	17	14	9.0	12	300	68	44	22	4.5	55
6	5.6	25	17	14	9.0	13	380	66	51	21	4.9	62
7	5.6	23	16	13	9.0	13	505	64	64	20	4.7	69
8	5.9	22	16	12	9.0	14	650	63	75	19	3.7	72
9	7.4	22	16	12	9.5	13	730	62	74	18	3.6	69
10	6.8	21	17	13	10	13	705	60	71	16	3.9	62
11	6.5	20	16	13	10	14	631	59	76	16	3.7	55
12	8.2	20	16	13	10	14	517	59	81	14	3.7	51
13	7.4	22	16	13	10	14	422	59	80	15	3.9	44
14	7.4	23	15	13	11	13	351	59	75	15	3.4	42
15	7.4	23	15	12	11	13	289	66	73	16	3.4	42
16	10	24	14	12	11	13	241	68	74	16	3.7	44
17	31	24	14	11	11	13	206	66	72	14	3.9	44
18	23	24	15	10	11	14	181	66	67	15	5.4	39
19	19	25	15	9.5	11	16	164	66	60	13	5.9	36
20	18	26	15	9.5	11	24	153	61	55	13	5.6	34
21	17	26	15	9.5	11	22	142	58	50	12	5.9	44
22	16	25	14	9.5	11	26	131	55	45	10	5.6	51
23	15	24	14	9.0	12	26	121	49	41	11	11	54
24	14	22	14	9.0	12	24	112	44	37	12	7.4	55
25	13	22	14	8.5	12	40	105	40	34	10	11	55
26	12	23	14	8.5	12	60	101	37	32	10	14	53
27	13	25	14	8.5	12	60	96	37	30	10	16	52
28	15	25	14	8.5	12	100	90	37	28	8.6	18	51
29	16	22	14	8.5	12	180	85	37	27	7.8	30	51
30	18	22	14	8.5	---	250	82	39	26	7.4	25	52
31	20	---	14	9.0	---	280	---	39	---	6.2	20	---
TOTAL	362.0	712	479	347.0	304.5	1342	8505	1778	1603	467.0	249.8	1517
MEAN	11.7	23.7	15.5	11.2	10.5	43.3	284	57.4	53.4	15.1	8.06	50.6
MAX	31	32	20	14	12	280	730	78	81	26	30	72
MIN	4.3	20	14	8.5	9.0	12	82	37	26	6.2	3.4	34
AC-FT	718	1410	950	688	604	2660	16870	3530	3180	926	495	3010

CAL YR 1979 TOTAL 83631.1 MEAN 229 MAX 4350 MIN 4.3 AC-FT 165900
WTR YR 1980 TOTAL 17666.3 MEAN 48.3 MAX 730 MIN 3.4 AC-FT 35040

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to current year.
WATER TEMPERATURES: October 1966 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,170 micromhos Mar. 18, 1967; minimum daily, 180 micromhos Apr. 18, 1979.
WATER TEMPERATURES: Maximum daily, 28.5°C July 18, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,390 micromhos Jan. 19; minimum daily, 400 micromhos Mar. 31.
WATER TEMPERATURES: Maximum daily, 27.5°C July 14, 24; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) (00310)
OCT											
15...	1345	7.6	960	8.2	--	8.0	30	4.5	9.8	87	2.7
NOV											
15...	0920	24	1060	8.1	--	1.0	15	20	12.3	98	.8
DEC											
04...	1220	18	1020	8.1	--	1.0	15	2.4	12.5	91	.9
JAN											
02...	1350	14	1240	7.6	--	.5	20	2.7	9.6	67	.5
FEB											
04...	1430	8.5	1060	7.7	--	.0	10	2.4	4.6	33	.4
MAR											
03...	1535	12	1140	7.8	--	.5	45	4.8	5.0	35	1.4
11...	1140	E14	1160	7.6	--	.5	10	4.5	3.0	21	1.3
19...	1220	14	1120	7.5	--	.5	25	3.6	5.2	37	--
25...	1135	E40	924	7.5	--	1.0	50	5.9	6.4	46	3.4
31...	1310	E280	409	7.7	--	.5	80	17	10.0	70	7.7
APR											
03...	0845	218	375	--	--	1.0	--	--	--	--	--
07...	1235	508	611	8.0	--	.5	50	18	9.8	70	1.3
14...	1435	331	539	8.2	--	7.0	50	10	13.5	113	6.7
22...	1200	131	687	8.2	--	16.0	30	8.6	8.4	86	4.2
29...	1500	87	802	8.4	--	17.0	20	6.5	9.0	95	2.8
MAY											
06...	1420	E66	882	8.4	--	16.5	25	8.4	8.7	90	9.3
13...	1125	58	940	8.3	--	12.0	40	5.7	10.1	95	2.9
21...	1300	E58	948	8.3	--	19.5	30	8.6	8.2	95	8.2
28...	1635	E37	918	8.2	--	23.5	40	12	7.4	89	3.9
JUN											
03...	1545	40	918	8.1	--	19.5	30	15	7.9	87	2.1
10...	1145	E71	919	8.4	--	20.0	40	14	7.8	87	2.6
17...	1310	E72	901	8.2	--	20.5	70	24	7.3	82	2.2
24...	1220	E37	949	8.4	--	24.5	70	23	6.9	84	2.2
30...	1115	26	919	8.3	--	17.5	40	23	7.9	83	1.6
JUL											
29...	1420	7.6	928	8.6	--	24.5	25	4.2	8.1	102	2.1
AUG											
25...	1600	13	881	8.5	--	22.0	15	6.3	8.0	95	1.9
SEP											
29...	1500	52	858	8.4	23.0	14.0	42	9.6	9.4	96	.9

E - Estimated.

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)
OCT											
15...	K14	K13	27	320	0	74	34	97	52	2.3	110
NOV											
15...	650	K3	34	330	69	74	35	110	55	2.6	120
DEC											
04...	300	K1	K13	370	0	85	38	97	49	2.2	110
JAN											
02...	K4	32	K4	430	0	100	44	100	45	2.1	110
FEB											
04...	K18	K20	25	410	0	98	39	92	33	2.0	100
MAR											
03...	1000	K16	17	400	0	97	39	96	34	2.1	100
11...	180	K2	K2	420	0	100	41	100	34	2.1	110
19...	260	K3	18	400	0	97	39	96	34	2.1	100
25...	K150	K23	7500	320	0	77	31	79	34	1.9	88
31...	>2000	K13	1800	130	19	32	12	27	29	1.0	40
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
07...	900	K50	110	190	2	44	20	53	36	1.7	65
14...	290	K4	120	170	9	38	18	50	37	1.7	60
22...	3800	46	K44	220	0	50	23	65	38	1.9	75
29...	K15000	K17	44	260	0	61	27	75	37	2.0	85
MAY											
06...	160	K13	K62	290	0	66	31	84	37	2.1	96
13...	K9700	K13	K27	310	0	73	32	86	36	2.1	96
21...	31	120	K11	320	0	75	33	92	37	2.2	100
28...	>8000	<3	37	310	0	71	33	88	37	2.2	98
JUN											
03...	K17000	K33	77	300	0	67	32	84	37	2.1	94
10...	K23000	K43	130	310	0	70	34	94	38	2.3	100
17...	2500	K23	110	260	0	56	30	94	43	2.5	100
24...	K12000	140	110	280	0	59	32	87	39	2.3	96
30...	7800	K30	210	300	0	64	33	110	44	2.8	120
JUL											
29...	>8000	32	36	290	0	64	32	96	41	2.4	110
AUG											
25...	K19000	K60	140	280	0	62	31	90	40	2.3	100
SEP											
29...	4000	K40	180	250	0	50	30	85	42	2.3	95

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)
OCT											
15...	11	340	180	15	.3	17	649	633	.88	13.3	.04
NOV											
15...	8.7	260	200	23	.2	12	643	620	.87	41.7	.05
DEC											
04...	8.2	410	140	18	.3	14	665	648	.90	32.3	.03
JAN											
02...	9.7	470	150	21	.3	19	777	728	1.06	29.4	.17
FEB											
04...	8.4	410	160	27	.2	22	743	697	1.01	17.1	.02
MAR											
03...	8.1	440	160	21	.3	26	730	716	.99	23.7	.01
11...	9.5	460	160	20	.3	26	745	737	1.01	22.1	.00
19...	7.7	430	160	20	.2	27	714	710	.97	27.0	.11
25...	9.1	330	140	15	.2	21	563	574	.77	38.0	.37
31...	13	110	69	6.9	.1	13	272	244	.37	--	.85
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
07...	12	190	100	11	.1	.0	382	358	.52	524	.58
14...	10	160	100	9.3	.1	.1	354	322	.48	316	.01
22...	9.6	220	130	11	.2	12	438	433	.60	155	.00
29...	9.8	270	140	14	.2	17	520	507	.71	122	.00
MAY											
06...	12	310	140	13	.3	21	561	558	.76	109	.06
13...	9.7	330	150	16	.2	20	587	586	.80	91.9	.00
21...	10	350	150	20	.6	19	618	611	.84	--	.05
28...	10	340	140	17	.3	22	622	587	.85	58.8	.01
JUN											
03...	10	330	140	16	.2	22	595	571	.81	64.3	.08
10...	10	330	160	16	.3	23	620	607	.84	136	.09
17...	9.9	330	130	15	.2	17	588	551	.80	132	.12
24...	9.2	340	140	13	.2	20	578	566	.79	71.8	.14
30...	10	380	120	17	.3	23	611	608	.83	42.9	.29
JUL											
29...	10	330	150	17	.2	26	626	595	.85	12.8	.09
AUG											
25...	9.1	300	160	16	.2	21	573	570	.78	20.1	.00
SEP											
29...	9.5	310	120	17	.2	13	517	511	.70	72.6	.00

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2) (71856)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)
OCT											
15...	.00	.00	.02	.01	.03	.06	.01	.12	.06	.15	.08
NOV											
15...	.08	.35	.02	.00	.00	.07	.08	.04	.02	.05	.03
DEC											
04...	.04	.18	.02	.00	.00	.05	.04	.02	.02	.02	.03
JAN											
02...	.16	.71	.02	.01	.03	.19	.17	.10	.01	.12	.01
FEB											
04...	.04	.18	.11	.11	.36	.13	.15	.35	.34	.42	.44
MAR											
03...	.02	.09	.01	.00	.00	.02	.02	.58	.57	.70	.73
11...	.00	.00	.03	.03	.10	.02	.02	.64	.61	.77	.79
19...	.11	.49	.03	.02	.07	.14	.13	.67	.69	.81	.89
25...	.37	1.6	.02	.02	.07	.39	.39	.55	.55	.67	.71
31...	.82	3.6	.06	.06	.20	.91	.88	.36	.36	.44	.46
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
07...	.54	<2.4	.02	.02	.07	.60	.56	.37	.33	.45	.43
14...	.01	.04	.00	.00	.00	.01	.01	.04	.04	.05	.05
22...	.01	<.04	.00	.00	.00	.00	.01	.01	.04	.01	.05
29...	.00	<.00	.01	.00	.00	.01	.00	.01	.00	.01	.00
MAY											
06...	.06	.27	.00	.00	.00	.06	.06	.20	.00	.24	.00
13...	.00	.00	.01	.00	.00	.01	.00	.25	.06	.30	.08
21...	.00	.00	.01	.01	.03	.06	.01	.19	.34	.23	.44
28...	.01	<.04	.01	.01	.03	.02	.02	.04	.06	.05	.08
JUN											
03...	.09	<.40	.02	.01	.03	.10	.10	.19	.16	.23	.21
10...	.09	<.40	.03	.03	.10	.12	.12	.17	.05	.21	.06
17...	.13	<.58	.03	.00	.00	.15	.13	.10	.10	.12	.13
24...	.13	E.58	.03	.03	.10	.17	.16	.10	.06	.12	.08
30...	.16	.71	.03	.03	.10	.32	.19	.16	.10	.19	.13
JUL											
29...	.08	<.35	.01	.00	.00	.10	.08	.07	.09	.08	.12
AUG											
25...	.00	.00	.00	.01	.03	.00	.00	.07	.06	.08	.08
SEP											
29...	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01	.00

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS PO4) (00650)	PHOS- PHORUS, TOTAL (MG/L AS PO4) (71886)
OCT										
15...	1.1	1.4	1.2	.00	1.5	1.3	5.6	.260	.80	.58
NOV										
15...	.75	.83	.79	.00	.85	.86	3.8	.100	.25	.31
DEC										
04...	.87	.74	.89	.13	.76	.94	4.2	.080	.21	.25
JAN										
02...	1.5	1.4	1.6	.20	1.4	1.8	7.9	.090	.31	.28
FEB										
04...	.65	.66	1.0	.00	1.0	1.1	5.0	.110	.31	.34
MAR										
03...	.72	.53	1.3	.20	1.1	1.3	5.8	.140	.34	.43
11...	.56	.69	1.2	.00	1.3	1.2	5.4	.150	.55	.46
19...	.53	.51	1.2	.00	1.2	1.3	5.9	.170	.55	.52
25...	.75	.85	1.3	.00	1.4	1.7	7.5	.330	.89	1.0
31...	1.4	1.3	1.8	.10	1.7	2.7	12	.510	1.3	1.6
APR										
03...	--	--	--	--	--	--	--	--	--	--
07...	.61	.67	.98	.00	1.0	1.6	7.0	.400	.86	1.2
14...	2.5	1.1	2.5	1.4	1.1	2.5	11	.260	.25	.80
22...	1.4	.78	1.4	.58	.82	1.4	6.2	.130	.18	.40
29...	1.2	1.0	1.2	.20	1.0	1.2	5.4	.180	.31	.55
MAY										
06...	2.2	1.8	2.4	.60	1.8	2.5	11	.230	.34	.71
13...	1.1	.88	1.3	.36	.94	1.3	5.8	.240	.49	.74
21...	2.9	2.1	3.1	.70	2.4	3.2	14	.350	.37	1.1
28...	1.4	.87	1.4	.47	.93	1.4	6.3	.280	.46	.86
JUN										
03...	1.6	.68	1.8	.96	.84	1.9	8.4	.300	.25	.92
10...	1.3	1.4	1.5	.10	1.4	1.6	7.2	.250	.64	.77
17...	1.4	.90	1.5	.50	1.0	1.7	7.3	.220	.55	.67
24...	1.9	1.1	2.0	.80	1.2	2.2	9.6	.270	.64	.83
30...	2.8	.40	3.0	2.5	.50	3.3	15	.180	.58	.55
JUL										
29...	1.4	1.1	1.5	.30	1.2	1.6	7.1	.220	.52	.67
AUG										
25...	1.1	.81	1.2	.33	.87	1.2	5.3	.150	.28	.46
SEP										
29...	1.4	1.3	1.4	.10	1.3	1.4	6.2	.160	.34	.49

E - Estimated.

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DISSOL. (MG/L AS P) (00672)	PHOS-PHORUS, HYDRO. + ORTHO TOTAL (MG/L AS P) (00678)	PHOS-PHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC TOTAL (MG/L AS P) (00670)
OCT									
15...	.230	.19	.18	.55	.04	.10	.23	.28	.03
NOV									
15...	.080	.08	.07	.21	.03	.01	.11	.08	.00
DEC									
04...	.060	.07	.04	.12	.00	.01	.07	.05	.01
JAN									
02...	.080	.10	.10	.31	.00	.00	.09	.08	.00
FEB									
04...	.090	.10	.10	.31	.04	.03	.14	.13	.00
MAR									
03...	.140	.11	.10	.31	.01	.03	.12	.13	.02
11...	.130	.18	.17	.52	.00	.00	.15	.15	.00
19...	.160	.18	.17	.52	.00	.00	.17	.16	.00
25...	.310	.29	.28	.86	.01	.01	.30	.29	.03
31...	.480	.41	.44	1.4	.15	.03	.56	.47	.00
APR									
07...	.270	.28	.24	.74	.11	.00	.39	.23	.01
14...	.110	.08	.10	.31	.12	.00	.20	.09	.06
22...	.090	.06	.05	.15	.07	.02	.13	.07	.00
29...	.120	.10	.08	.25	.06	.03	.16	.11	.02
MAY									
06...	.170	.11	.15	.46	--	--	--	--	--
13...	.150	.16	.16	.49	--	--	--	--	--
21...	.310	.12	.13	.40	--	--	--	--	--
28...	.200	.15	.16	.49	.09	.03	.24	.19	.04
JUN									
03...	.220	.08	.13	.40	.18	.08	.26	.21	.04
10...	.170	.21	.21	.64	--	--	--	--	--
17...	.070	.18	.11	.34	.04	.04	.22	.15	.00
24...	.190	.21	.19	.58	.00	.00	.19	.13	.08
30...	.180	.19	.15	.46	.03	.02	.22	.17	.00
JUL									
29...	.200	.17	.15	.46	.14	.04	.31	.19	.00
AUG									
25...	.120	.09	.09	.28	.01	.00	.10	.07	.05
SEP									
29...	.130	.11	.07	.21	--	--	--	--	--

DATE	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT								
15...	.00	220	390	380	10	620	190	430
NOV								
15...	.00	220	90	70	20	120	10	110
DEC								
04...	.01	210	160	140	20	150	40	110
JAN								
02...	.00	200	140	130	<10	320	0	330
FEB								
04...	.00	200	130	120	10	2900	100	2800
MAR								
03...	.01	190	140	100	40	3200	0	3300
11...	.00	200	140	100	40	3500	0	3500
19...	.00	190	160	120	40	4000	0	4100
25...	.02	170	340	300	40	1600	100	1500
31...	.01	110	920	800	120	410	120	290
APR								
07...	.04	130	1300	1200	70	1100	610	490
14...	.02	180	580	550	30	290	170	120
22...	.02	160	330	310	20	30	0	40
29...	.01	170	20	10	10	430	350	80
MAY								
06...	--	180	370	360	<10	440	310	130
13...	--	180	420	410	<10	490	360	130
21...	--	230	370	360	10	580	300	280
28...	.01	220	690	680	<10	1500	400	1100
JUN								
03...	.01	200	580	570	<10	1100	370	730
10...	--	220	1100	1090	<10	590	320	270
17...	.00	210	1800	1790	<10	870	670	200
24...	.06	250	930	920	<10	830	500	330
30...	.01	210	830	820	<10	990	310	680
JUL								
29...	.01	230	190	180	<10	740	120	620
AUG								
25...	.05	180	260	250	<10	710	150	560
SEP								
29...	--	130	440	410	30	260	200	60

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)
OCT		
15...	10	.3
NOV		
15...	31	.1
DEC		
04...	12	.4
JAN		
02...	20	.2
FEB		
04...	17	.4
MAR		
03...	9.3	.4
11...	8.4	.1
19...	9.9	.1
25...	14	.5
31...	17	1.5
APR		
07...	21	2.0
14...	21	1.9
22...	13	1.1
29...	12	.7
MAY		
06...	12	1.3
13...	17	1.0
21...	12	1.0
28...	13	1.7
JUN		
03...	20	1.0
10...	19	1.1
17...	15	2.0
24...	27	1.4
30...	14	--
JUL		
29...	19	.5
AUG		
25...	8.7	.9
SEP		
29...	22	.5

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	960	---	995	1090	1100	1080	410	825	880	---	---	900
2	---	950	1000	1120	1100	1080	420	825	---	930	---	925
3	---	950	---	1120	1100	1080	410	850	880	930	---	900
4	925	---	---	1110	1100	1070	440	---	870	930	---	910
5	---	950	980	1130	1140	1040	490	---	900	930	---	---
6	900	950	1000	---	1100	1070	470	880	925	925	---	---
7	---	---	1010	1130	1110	1070	480	880	---	925	950	900
8	950	970	1000	1180	1130	950	495	870	900	900	---	750
9	945	980	---	1060	1090	---	---	860	920	880	950	---
10	1000	960	900	1130	950	1000	600	---	920	880	975	800
11	990	960	890	1160	1080	1110	500	---	880	850	950	880
12	990	1000	950	1140	1110	1150	500	840	820	870	970	---
13	955	---	---	---	---	1100	485	---	---	870	950	900
14	980	1010	1090	1170	1110	1100	540	870	820	870	950	---
15	960	1000	1100	1160	1140	1100	550	870	850	880	950	890
16	990	---	---	---	1130	---	---	890	880	---	---	880
17	950	970	---	---	1120	1080	560	---	850	880	950	825
18	955	960	1130	1120	1120	1070	630	---	850	880	945	800
19	980	970	---	1390	1100	1000	630	930	850	890	930	770
20	980	---	1130	1190	1110	1000	620	890	880	880	---	770
21	---	980	1120	1170	---	1060	650	900	890	880	920	750
22	980	1000	---	---	1120	1080	680	920	890	870	900	750
23	1020	1000	1100	---	1100	1010	700	---	---	860	900	750
24	1020	1010	---	1150	1060	950	730	930	890	875	---	760
25	1010	990	---	1150	1080	---	---	900	890	850	880	770
26	---	950	1080	1150	1090	840	750	---	900	870	---	780
27	1000	970	1090	1150	---	600	770	910	900	880	880	830
28	970	---	1100	---	---	505	775	---	900	850	870	875
29	---	990	1100	1130	1080	560	800	---	900	870	900	---
30	950	---	1120	1100	---	---	825	875	920	890	925	860
31	950	---	1110	1100	---	400	---	875	---	---	900	---
MEAN	971	976	1050	1150	1100	969	589	880	883	886	927	830

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.5	---	.0	.5	.0	.0	.5	18.0	21.0	---	---	17.0
2	---	2.0	.0	.5	.0	.0	.5	19.5	---	22.0	---	17.0
3	---	2.0	---	.0	.0	.0	.5	20.0	20.0	22.0	---	15.5
4	12.0	---	---	.0	.0	.0	.5	---	20.5	23.0	---	16.0
5	---	1.5	.0	.0	.0	.0	.0	---	18.5	22.0	---	17.0
6	10.0	1.0	.0	---	.0	.0	1.0	17.0	18.5	24.5	---	---
7	---	---	.0	.0	.0	.0	.0	13.0	---	24.0	20.5	18.5
8	9.5	.5	.0	.0	.0	.0	.0	13.5	19.5	24.0	---	21.0
9	9.0	.0	---	.0	.0	---	---	14.0	20.0	26.0	21.0	---
10	9.0	.0	.0	.0	.0	.0	4.0	---	22.0	26.5	20.0	17.0
11	9.0	.0	.0	.0	.0	.0	4.5	---	23.0	26.5	20.0	16.5
12	7.0	.0	.0	.0	.0	.0	3.5	14.0	24.0	26.5	20.0	---
13	7.5	---	---	---	---	.0	5.0	---	---	26.0	21.0	15.5
14	7.5	---	.0	.0	.0	.0	7.0	14.0	23.0	27.5	21.0	---
15	7.5	2.0	.0	.0	.0	.0	7.5	13.0	21.0	25.5	19.0	15.0
16	8.0	---	---	---	.0	---	---	15.5	22.0	---	---	14.0
17	7.5	2.5	---	---	.0	.0	9.5	---	21.0	24.5	13.0	13.5
18	8.0	2.0	.0	.0	.0	.0	11.0	---	20.0	24.0	21.0	13.0
19	6.5	2.5	---	.0	.0	.0	13.0	19.5	20.5	23.0	21.0	12.0
20	8.0	---	.5	.0	.0	.0	13.5	21.0	21.0	22.0	20.5	12.5
21	7.0	1.0	.0	.0	---	.0	16.0	23.0	23.0	22.5	21.0	13.5
22	6.0	.0	---	---	.0	.0	16.0	22.5	23.0	23.5	21.0	13.0
23	6.0	.0	.5	---	.0	.0	15.5	---	---	25.0	22.0	12.0
24	6.0	.0	---	.0	.0	.0	14.5	21.5	26.0	25.0	---	11.0
25	6.0	.0	---	.0	.0	---	---	23.5	26.5	23.0	20.0	10.5
26	---	.0	.0	.0	.0	.0	16.0	---	24.5	24.0	---	11.0
27	6.0	.0	.5	.0	---	.0	16.5	24.5	22.0	23.0	20.0	11.0
28	5.5	---	.5	---	---	.0	17.0	---	19.0	24.5	20.0	12.0
29	---	.0	.5	.0	.0	.5	18.0	---	21.0	24.5	18.0	---
30	5.5	---	.5	.0	---	---	18.0	23.0	20.0	---	19.5	14.0
31	4.0	---	.5	.0	---	.0	---	21.5	---	---	17.0	---
MEAN	7.5	1.0	.0	.0	.0	.0	8.5	18.5	21.5	24.0	20.0	14.5

05057200 BALDHILL CREEK NEAR DAZEY, ND

LOCATION.--Lat 47°13'45", long 98°07'28", in NW¼SE¼SW¼ sec.2, T.143 N., R.59 W., Barnes County, Hydrologic Unit 09020203, on left bank 500 ft (150 km) upstream from bridge on county highway, 4.5 mi (7.2 km) northeast of Dazey, and 14 mi (23 km) upstream from mouth.

DRAINAGE AREA.--691 mi² (1,790 km²), of which about 340 mi² (880 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1956 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Prior to Nov. 9, 1956, nonrecording gage 500 ft (150 m) downstream at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--24 years, 15.8 ft³/s (0.447 m³/s), 11,450 acre-ft/yr (14.1 hm³/yr); median of yearly mean discharges, 12 ft³/s (0.34 m³/s), 8,700 acre-ft/yr (10.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 9,000 ft³/s (255 m³/s) Apr. 19, 1979, gage height, 17.78 ft (5.419 m), from floodmark; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 100 ft³/s (2.83 m³/s) Mar. 30, gage height, 8.15 ft (2.484 m), from floodmark, only peak above base of 60 ft³/s (1.70 m³/s); minimum daily, 0.01 ft³/s (<0.001 m³/s) Aug. 1 & 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.67	2.4	1.9	1.6	.25	.60	90	4.3	2.2	.59	.01	2.8
2	.72	2.4	1.9	1.6	.20	.60	85	4.3	2.0	.55	.02	2.0
3	.72	2.3	2.0	1.6	.20	.60	80	4.1	2.0	.40	.01	1.0
4	.67	2.2	2.2	1.6	.15	.60	75	3.7	2.5	.37	.02	1.0
5	.72	2.1	2.2	1.5	.10	.60	75	3.5	4.3	.24	.03	1.0
6	.72	2.0	2.1	1.5	.10	.55	80	3.3	3.9	.31	.07	1.0
7	1.2	2.0	2.1	1.5	.10	.55	74	3.2	4.6	.43	1.6	1.0
8	1.6	1.9	2.1	1.4	.25	.55	55	3.2	4.1	.31	1.6	1.0
9	1.6	1.9	2.0	1.3	.50	.55	40	3.3	3.3	.22	1.3	1.0
10	1.4	1.9	2.0	1.2	.55	.55	27	3.3	2.7	.22	1.2	1.0
11	1.3	1.9	2.0	1.2	.55	.50	22	3.0	2.3	.16	1.2	2.0
12	1.2	1.9	2.0	1.0	.60	.50	17	2.8	3.4	.10	1.2	1.0
13	1.1	1.9	2.0	1.0	.60	.50	16	3.0	1.4	.08	1.3	1.0
14	1.2	1.9	1.9	.90	.60	.50	16	3.0	1.2	.14	.97	1.0
15	1.3	1.9	1.9	.90	.55	.50	14	3.2	.92	.12	.63	1.0
16	1.3	2.0	1.9	.80	.55	.55	12	3.0	.92	.12	.55	1.0
17	1.3	2.0	1.9	.80	.50	.65	12	2.8	1.0	.10	.82	1.0
18	1.3	2.0	1.9	.80	.50	2.0	11	2.5	1.5	.14	.63	1.0
19	1.3	2.0	1.8	.80	.50	15	10	2.5	1.5	.15	.55	1.0
20	1.5	2.0	1.8	.80	.50	31	9.6	2.3	1.2	.37	.97	1.0
21	1.5	2.0	1.8	.75	.50	24	8.7	2.1	1.2	.40	1.2	1.0
22	1.6	2.0	1.8	.60	.50	18	8.4	1.8	1.0	.37	.97	1.0
23	1.6	2.0	1.8	.55	.55	27	7.2	1.7	.87	.31	5.5	1.0
24	1.5	2.0	1.7	.55	.55	17	7.2	1.7	.87	.28	2.2	1.0
25	1.5	1.9	1.7	.50	.55	16	6.9	1.6	.82	.22	2.2	1.0
26	1.6	1.8	1.7	.45	.60	35	6.6	1.7	.72	.16	1.6	1.0
27	1.6	1.8	1.7	.45	.60	31	6.3	1.8	.72	.16	1.3	1.0
28	1.6	1.8	1.7	.40	.60	42	5.6	1.6	.77	.16	1.0	1.0
29	1.7	1.8	1.6	.30	.60	62	4.1	1.8	.67	.10	20	1.0
30	1.8	1.8	1.6	.25	---	67	4.3	1.7	.63	.08	6.0	.67
31	2.1	---	1.6	.25	---	80	---	1.7	---	.03	4.6	---
TOTAL	40.92	59.5	58.3	28.85	12.90	476.45	885.9	83.5	55.21	7.39	61.25	33.47
MEAN	1.32	1.98	1.88	.93	.44	15.4	29.5	2.69	1.84	.24	1.98	1.12
MAX	2.1	2.4	2.2	1.6	.60	80	90	4.3	4.6	.59	20	2.8
MIN	.67	1.8	1.6	.25	.10	.50	4.1	1.6	.63	.03	.01	.67
AC-FT	81	118	116	57	26	945	1760	166	110	15	121	66

CAL YR 1979 TOTAL 22820.65 MEAN 62.5 MAX 4500 MIN .10 AC-FT 45260
WTR YR 1980 TOTAL 1803.64 MEAN 4.93 MAX 90 MIN .01 AC-FT 3580

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955-56, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) (00310)
OCT											
16...	1235	1.4	940	8.4	--	9.0	20	1.2	10.8	97	3.5
NOV											
14...	1650	1.9	1020	8.1	--	1.5	10	7.8	11.8	88	1.3
DEC											
04...	1640	2.0	1260	7.6	--	3.0	10	1.4	13.6	105	1.4
JAN											
04...	1230	1.6	1320	7.9	--	1.0	10	2.1	13.4	97	1.4
FEB											
05...	0925	.10	1520	7.7	--	.0	20	1.9	8.6	61	1.4
MAR											
04...	1000	.60	1060	7.3	--	.5	5	3.7	5.0	35	.8
21...	1325	21	458	8.0	--	.5	50	10	11.6	81	--
25...	1440	E21	379	7.6	--	1.0	60	10	9.6	68	8.6
31...	1710	81	283	7.8	--	1.0	70	6.6	10.6	75	7.0
APR											
07...	1615	47	474	7.7	--	1.0	50	3.5	10.7	77	2.9
15...	1150	13	694	--	--	7.0	--	--	--	--	--
22...	1620	8.5	870	--	--	16.0	--	--	--	--	--
30...	0925	4.1	851	8.1	--	16.5	30	4.7	8.2	84	3.1
JUN											
04...	0930	2.8	945	8.1	--	19.0	30	8.4	7.5	83	3.9
17...	1140	1.0	915	--	--	23.5	--	--	--	--	--
30...	1635	.64	910	8.5	--	21.5	30	7.7	10.6	123	4.4
JUL											
30...	1045	.08	958	8.3	--	22.0	70	11	7.5	90	5.5
AUG											
26...	1035	1.7	786	8.3	--	19.0	60	11	7.1	79	4.3
SEP											
30...	0940	.67	820	8.4	21.0	15.0	21	11	8.2	86	1.8

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)
OCT											
16...	38	K9	190	380	88	74	47	78	30	1.7	88
NOV											
14...	58	<3	K7	410	81	92	44	60	35	1.3	69
DEC											
04...	980	K3	K10	420	33	100	42	120	38	2.5	130
JAN											
04...	--	--	--	450	32	110	43	130	50	2.7	140
FEB											
05...	31	<2	24	660	99	160	63	92	23	1.6	100
MAR											
04...	130	K7	32	480	71	120	44	60	21	1.2	67
21...	>8000	K20	K16000	190	40	48	17	18	16	.6	28
25...	K55	K20	6000	140	33	36	13	14	16	.5	25
31...	3100	<3	240	110	28	27	9.9	8.5	13	.4	20
APR											
07...	850	K7	110	180	71	46	16	23	20	.7	35
15...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
30...	5800	K25	K3	350	92	85	34	48	22	1.1	63
JUN											
04...	K17000	K690	780	360	81	77	41	63	27	1.4	74
17...	--	--	--	--	--	--	--	--	--	--	--
30...	7000	150	K42	350	28	70	42	77	32	1.8	87
JUL											
30...	>16000	K700	700	330	29	61	43	84	35	2.0	96
AUG											
26...	K27000	1100	330	280	44	51	38	62	31	1.6	73
SEP											
30...	8400	83	K40	310	41	62	38	57	28	1.4	66

E - Estimated.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	CAR DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
OCT											
16...	10	290	2.3	240	21	.2	19	652	664	.89	2.46
NOV											
14...	8.5	330	--	220	15	.2	18	618	657	.84	3.17
DEC											
04...	9.3	390	--	230	37	.2	24	795	798	1.08	4.29
JAN											
04...	9.1	420	--	240	44	.2	30	857	860	1.17	3.70
FEB											
05...	10	560	--	290	34	.2	34	991	1020	1.35	.27
MAR											
04...	6.8	410	--	170	16	.2	32	695	697	.95	1.13
21...	10	150	--	73	5.9	.1	15	296	282	.40	16.8
25...	11	110	--	65	6.2	.1	10	247	226	.34	14.0
31...	12	80	--	53	4.4	.0	9.6	214	177	.29	46.8
APR											
07...	12	110	--	110	7.9	.1	.1	314	283	.43	39.8
15...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
30...	15	260	--	180	15	.2	14	578	548	.79	6.40
JUN											
04...	11	280	--	200	18	.2	19	629	598	.86	4.76
17...	--	--	--	--	--	--	--	--	--	--	--
30...	10	320	--	170	20	.3	17	607	599	.83	1.05
JUL											
30...	12	300	--	200	26	.2	12	658	619	.89	.14
AUG											
26...	11	240	--	160	17	.2	15	515	499	.70	2.36
SEP											
30...	8.5	270	--	140	17	.2	12	514	497	.70	.93

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)
OCT											
16...	.00	.00	.00	.01	.01	.03	.01	.00	.07	.03	.08
NOV											
14...	.00	.02	.09	.02	.01	.03	.02	.03	.06	.05	.07
DEC											
04...	.14	.03	.13	.02	.01	.03	.16	.04	.24	.22	.29
JAN											
04...	.04	.03	.13	.01	.01	.03	.05	.04	.35	.34	.42
FEB											
05...	.01	.04	.18	.04	.01	.03	.05	.05	.24	.11	.29
MAR											
04...	.08	.07	.31	.01	.01	.03	.09	.08	.54	.53	.65
21...	.76	.77	3.4	.05	.04	.13	.81	.81	.33	.29	.40
25...	.76	.74	3.3	.06	.06	.20	.82	.80	.25	.10	.30
31...	.86	.86	3.8	.04	.04	.13	.90	.90	.13	.06	.16
APR											
07...	.29	.29	1.3	.01	.01	.03	.30	.30	.17	.17	.21
15...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
30...	.00	.00	<.00	.01	.00	.00	.00	.00	.00	.00	.00
JUN											
04...	.00	.01	<.04	.01	.00	.00	.01	.01	.12	.01	.15
17...	--	--	--	--	--	--	--	--	--	--	--
30...	.02	.00	.00	.00	.00	.00	.02	.00	.05	.00	.06
JUL											
30...	.01	.00	<.00	.01	.01	.03	.02	.01	.01	.00	.01
AUG											
26...	.00	.00	.00	.00	.00	.00	.00	.00	.02	.02	.02
SEP											
30...	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.02

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER QUALITY DATA, WATER YEAR UCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)
OCT 16...	.04	.88	.63	.95	.29	.66	.96	4.3	.060	.03	.18
NOV 14...	.06	.63	.54	.69	.10	.59	.71	3.1	.030	.06	.09
DEC 04...	.28	.76	.63	1.0	.15	.85	1.2	5.1	.040	.09	.12
JAN 04...	.44	1.1	.76	1.4	.30	1.1	1.5	6.4	.040	.09	.12
FEB 05...	.14	.86	.69	1.1	.30	.80	1.2	5.1	.050	.18	.15
MAR 04...	.68	.56	.35	1.1	.22	.88	1.2	5.3	.050	.15	.15
21...	.37	1.8	.81	2.1	1.0	1.1	2.9	13	.360	.80	1.1
25...	.13	1.7	1.4	1.9	.40	1.5	2.7	12	.320	.71	.98
31...	.08	1.5	1.3	1.6	.20	1.4	2.5	11	.400	1.5	1.2
APR 07...	.22	1.7	1.2	1.9	.50	1.4	2.2	9.7	.260	.58	.80
15...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
30...	.00	1.1	1.0	1.1	.10	1.0	1.1	4.9	.090	.09	.28
JUN 04...	.01	1.4	.70	1.5	.79	.71	1.5	6.7	.180	.15	.55
17...	--	--	--	--	--	--	--	--	--	--	--
30...	.00	1.6	.50	1.6	1.1	.50	1.6	7.2	.100	.09	.31
JUL 30...	.00	2.1	2.3	2.1	.00	2.3	2.1	9.4	.220	.25	.67
AUG 26...	.03	1.6	.92	1.6	.66	.94	1.6	7.1	.150	.03	.46
SEP 30...	.00	.98	.90	1.0	.10	.90	1.0	4.4	.090	.03	.28

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DISSOL. (MG/L AS P) (00672)	PHOS-PHORUS, HYDRO. + ORTHO TOTAL (MG/L AS P) (00678)	PHOS-PHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC TOTAL (MG/L AS P) (00670)
OCT 16...	.020	.01	.01	.03	--	.01	--	.02	--
NOV 14...	.010	.02	.01	.03	.01	.01	.03	.02	.00
DEC 04...	.010	.03	.01	.03	.00	.00	.03	.01	.01
JAN 04...	.000	.03	.04	.12	.01	.00	.04	.02	.00
FEB 05...	.010	.06	.02	.06	.02	.02	.08	.04	.00
MAR 04...	.030	.05	.04	.12	.00	.00	.05	.03	.00
21...	.310	.26	.25	.77	.09	.05	.35	.30	.01
25...	.270	.23	.23	.71	.01	.00	.24	.20	.08
31...	.360	.48	.33	1.0	.00	.00	.41	.31	.00
APR 07...	.200	.19	.20	.61	.04	.00	.23	.17	.03
30...	.040	.03	.02	.06	.05	.02	.08	.04	.01
JUN 04...	.080	.05	.07	.21	.10	.00	.15	.07	.03
30...	.040	.03	.02	.06	.07	.01	.10	.03	.00
JUL 30...	.090	.08	.03	.09	.07	.02	.15	.05	.07
AUG 26...	.040	.01	.01	.03	.06	.00	.07	.01	.08
SEP 30...	.030	.01	.01	.03	--	--	--	--	--

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT								
16...	.00	240	210	200	10	330	270	60
NOV								
14...	.00	180	40	30	10	40	0	90
DEC								
04...	.00	260	140	120	20	350	0	350
JAN								
04...	.00	280	230	200	30	550	0	560
FEB								
05...	.00	260	170	160	<10	560	0	560
MAR								
04...	.00	170	180	170	<10	730	20	710
21...	.01	120	730	640	90	600	0	620
25...	.07	100	2500	2400	120	360	30	330
31...	.05	100	440	340	100	220	20	200
APR								
07...	.03	110	340	260	80	360	20	340
30...	.00	160	220	190	30	530	300	230
JUN								
04...	.01	200	470	460	<10	630	620	10
30...	.01	270	450	440	<10	500	490	10
JUL								
30...	.04	300	570	550	20	630	600	30
AUG								
26...	.03	200	550	530	20	500	490	9
SEP								
30...	--	190	630	620	10	250	210	40

DATE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)
OCT		
16...	9.0	1.5
NOV		
14...	20	--
DEC		
04...	8.9	.3
JAN		
04...	11	.4
FEB		
05...	8.9	1.1
MAR		
04...	3.3	.6
21...	20	.5
25...	24	1.1
31...	14	.8
APR		
07...	14	.6
30...	13	.7
JUN		
04...	12	1.8
30...	14	2.5
JUL		
30...	19	3.1
AUG		
26...	9.9	2.5
SEP		
30...	9.1	.8

05057500 LAKE ASHTABULA AT BALDHILL DAM, ND

LOCATION.--Lat 47°02'00", long 98°05'00", in NW¼ sec.18, T.141 N., R.58 W., Barnes County, Hydrologic Unit 09020203, at Baldhill Dam on Sheyenne River, and 8 mi (13 km) northwest of Valley City.

DRAINAGE AREA.--7,470 mi^2 (19,300 km^2), approximately, of which about 5,560 mi^2 (14,400 km^2) is probably noncontributing, including 3,800 mi^2 (9,800 km^2) in closed basins.

PERIOD OF RECORD.--July 1949 to current year.

REVISED RECORDS.--WSP 1238: 1950(M). WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth-fill dam, 1,650 ft (503 m) long; storage began on July 30, 1949; dam completed September 1949. Usable capacity, 69,100 acre-ft (85.2 hm^3) between invert of outlet conduit, elevation, 1,238.0 ft (377.34 m), and normal pool level, elevation, 1,266.0 ft (385.8 m). Dead storage below elevation 1,238.0 ft (377.34 m), 1,500 acre-ft (1.85 hm^3). Maximum pool elevation, 1,273.2 ft (388.07 m), capacity, 116,500 acre-ft (144 hm^3). Low flows are controlled by 2 sluice gates 3 ft (0.914 m) in diameter. The spillway crest is 120 ft (36.6 m) long at elevation 1,252.0 ft (381.61 m), surmounted by 3 taintor gates, each 15 ft (4.572 m) high and 40 ft (12.192 m) long. The reservoir is operated for flood control and to increase low-water flow.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 91,400 acre-ft (113 hm^3) May 14, 1950, elevation, 1,269.46 ft (386.931 m); minimum since reservoir first reached spillway level, 6,660 acre-ft (8.21 hm^3) Aug. 11-14, 1950, elevation, 1,245.13 ft (379.516 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 72,140 acre-ft (88.9 hm^3) June 18, elevation, 1,266.27 ft (385.959 m); minimum, 54,860 acre-ft (67.6 hm^3) Mar. 19, elevation, 1,263.12 ft (384.999 m).

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,265.58	68,250	—
Oct. 31	1,264.90	64,250	-4,000
Nov. 30	1,263.22	55,160	-9,000
Dec. 31	1,263.35	55,550	+390
CAL YR 1979	—	—	-540
Jan. 31	1,263.38	55,640	+90
Feb. 28	1,263.39	55,670	+30
Mar. 31	1,263.76	56,780	+1,110
Apr. 30	1,265.73	69,090	+12,310
May 31	1,265.91	70,100	+1,010
June 30	1,266.06	70,940	+840
July 31	1,265.58	68,250	-2,690
Aug. 31	1,265.89	69,980	+1,730
Sept. 30	1,264.50	61,250	-8,730
WTR YR 1980	—	—	-7,000

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND

LOCATION.--Lat 47°01'50", long 98°05'50", in NW¼ sec.18, T.141 N., R.58 W., Barnes County, Hydrologic Unit 09020204, on right bank 600 ft (180 m) downstream from Baldhill Dam, 8 mi (13 km) northwest of Valley City, and at mile 270.5 (435.2 km).

DRAINAGE AREA.--7,470 mi² (19,350 km²), approximately, of which about 5,560 mi² (14,400 km²) is probably noncontributing, including 3,800 mi² (9,840 km²) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1949 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,200.00 ft (365.760 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow completely regulated by Lake Ashtabula (station 05057500). Records 1955 to 1972 include releases at Baldhill Dam to the fish-rearing ponds of the Fish and Wildlife Service. Small diversions are still made but not published.

AVERAGE DISCHARGE (UNADJUSTED).--31 years, 121 ft³/s (3.427 m³/s), 87,660 acre-ft/yr (108 hm³/yr); median of yearly mean discharges, 88 ft³/s (2.49 m³/s), 63,800 acre-ft/yr (79 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,740 ft³/s (134 m³/s) Apr. 24, 1979, gage height, 36.26 ft (11.052 m); no flow at times in 1950, 1952-53, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 516 ft³/s (14.6 m³/s) Apr. 3, gage height, 27.38 ft (8.345 m); minimum, 1.00 ft³/s (0.028 m³/s) Nov. 6 as the result of regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	251	6.9	3.7	11	11	361	10	8.8	60	10	11
2	20	246	3.7	3.7	11	11	431	10	8.8	60	10	43
3	18	246	3.3	3.7	10	11	481	9.9	8.8	44	9.5	84
4	8.7	242	3.3	6.1	10	16	492	9.3	9.2	32	10	83
5	7.0	276	3.6	17	10	28	492	9.2	9.2	32	11	83
6	8.9	227	2.8	18	11	45	492	10	9.2	30	11	83
7	8.5	307	3.2	9.3	11	59	430	10	9.2	22	10	85
8	7.3	313	4.9	7.5	11	63	323	10	9.2	16	9.5	85
9	7.0	313	4.9	8.7	11	63	290	9.9	8.8	12	9.3	109
10	7.0	313	4.9	16	11	63	248	10	8.5	12	9.2	135
11	6.8	313	5.1	10	11	63	129	9.2	8.5	11	8.7	136
12	5.9	313	5.1	11	11	63	90	9.2	8.5	11	8.8	190
13	5.9	313	5.3	11	11	63	90	8.6	8.5	11	9.3	227
14	5.9	318	5.3	11	11	67	62	8.6	8.5	11	9.5	227
15	6.0	324	5.1	11	11	72	45	8.6	8.5	11	9.5	246
16	21	147	5.1	11	11	72	24	9.0	8.5	11	9.7	260
17	66	12	5.1	11	11	72	9.7	9.2	8.5	11	9.8	260
18	105	10	5.1	11	11	81	10	9.2	8.5	11	9.8	260
19	152	17	4.5	11	11	89	10	9.2	8.5	10	10	269
20	170	16	4.4	11	11	90	9.9	9.5	19	10	11	265
21	170	19	4.3	11	11	93	9.6	9.5	29	10	11	262
22	170	18	4.1	11	11	96	9.3	9.5	29	10	11	267
23	170	15	4.1	11	11	97	9.0	9.2	29	10	10	197
24	185	12	4.0	11	11	114	7.6	9.2	29	10	10	99
25	210	11	3.7	11	11	125	6.3	9.2	29	10	10	99
26	218	18	3.7	11	11	117	5.9	9.5	29	10	10	99
27	218	21	3.7	11	11	117	5.5	9.5	45	10	10	99
28	218	20	3.7	11	11	128	6.4	8.8	59	10	12	99
29	223	25	3.7	11	11	148	6.5	8.8	60	10	11	99
30	227	15	3.7	11	---	167	9.6	8.5	60	10	11	99
31	242	---	3.7	11	---	273	---	8.5	---	10	11	---
TOTAL	2907.9	4691	134.0	323.7	316	2577	4595.3	288.8	583.2	538	312.6	4560
MEAN	93.8	156	4.32	10.4	10.9	83.1	153	9.32	19.4	17.4	10.1	152
MAX	242	324	6.9	18	11	273	492	10	60	60	12	269
MIN	5.9	10	2.8	3.7	10	11	5.5	8.5	8.5	10	8.7	11
AC-FT	5770	9300	266	642	627	5110	9110	573	1160	1070	620	9040

CAL YR 1979 TOTAL 122926.9 MEAN 337 MAX 4710 MIN 2.8 AC-FT 243800
WTR YR 1980 TOTAL 21827.5 MEAN 59.6 MAX 492 MIN 2.8 AC-FT 43290

RED RIVER OF THE NORTH BASIN

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-65, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) (00310)
OCT											
17...	1250	80	508	9.0	--	10.5	25	2.0	11.0	101	4.1
NOV											
14...	1255	294	629	8.4	--	2.5	24	2.2	12.6	98	.8
DEC											
05...	1005	3.0	690	8.0	--	2.0	10	1.6	11.0	81	1.1
JAN											
10...	1115	8.2	810	8.0	--	3.0	15	2.6	11.0	84	1.4
FEB											
05...	1415	10	870	8.0	--	5.0	15	2.5	12.0	98	1.3
MAR											
04...	1515	20	989	--	--	5.0	--	--	--	--	--
05...	0845	E28	960	7.8	--	4.0	25	4.0	9.8	76	1.5
20...	0920	90	892	--	--	5.0	--	--	--	--	--
APR											
01...	0910	346	809	7.9	--	4.5	20	3.4	9.3	73	2.3
30...	1330	13	730	8.6	--	14.0	20	4.5	14.6	143	4.1
JUN											
04...	1330	9.3	682	8.3	--	20.0	20	2.3	9.8	109	2.4
JUL											
01...	0925	60	669	8.6	--	20.0	20	5.4	9.2	102	2.8
30...	1510	10	640	8.8	--	25.0	25	2.9	9.5	120	2.3
AUG											
26...	1445	10	649	8.7	--	21.5	20	32	10.8	126	2.7
SEP											
30...	1345	99	651	8.7	29.0	15.0	12	2.0	10.0	104	.6

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)
OCT											
17...	28	K1	78	210	18	47	22	49	32	1.5	60
NOV											
14...	92	<3	K7	200	0	45	21	54	49	1.7	63
DEC											
05...	330	<1	K10	220	11	49	24	60	49	1.8	69
JAN											
10...	K1	K1	K2	250	0	54	28	78	40	2.1	80
FEB											
05...	K1	<2	K8	260	0	54	30	79	39	2.1	89
MAR											
04...	--	--	--	--	--	--	--	--	--	--	--
05...	45	<1	<1	280	0	59	33	87	39	2.3	97
20...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	K32	K1	K6	270	0	57	30	80	38	2.1	90
30...	1000	K2	K15	250	8	53	28	69	37	1.9	79
JUN											
04...	5400	K10	49	220	23	48	25	61	36	1.8	71
JUL											
01...	>2000	K30	K50	220	0	47	24	63	37	1.9	73
30...	>2000	K3	68	200	0	40	24	59	38	1.8	69
AUG											
26...	>8000	K13	38	210	0	42	25	63	38	1.9	73
SEP											
30...	2900	<1	20	210	0	43	24	58	37	1.8	68

E - Estimated.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	POTASSIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2) (00405)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)
OCT											
17...	11	190	.4	120	9.2	.2	14	379	387	.52	81.9
NOV											
14...	9.2	200	--	110	11	.1	15	400	387	.54	318
DEC											
05...	9.2	210	--	120	11	.2	17	436	418	.59	3.53
JAN											
10...	1.8	290	--	120	16	.2	22	527	497	.72	11.7
FEB											
05...	9.8	270	--	150	18	.1	21	558	527	.76	15.1
MAR											
04...	--	--	--	--	--	--	--	--	--	--	--
05...	10	310	--	170	16	.2	23	604	587	.82	--
20...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	11	270	--	160	16	.1	22	546	542	.74	510
30...	9.7	240	--	130	13	.2	14	484	462	.66	17.0
JUN											
04...	10	200	--	130	10	.1	14	430	420	.58	10.6
JUL											
01...	9.9	230	--	110	11	.2	9.9	438	413	.60	71.0
30...	10	210	--	120	11	.1	12	426	403	.58	11.5
AUG											
26...	10	210	--	120	12	.2	17	426	416	.58	11.5
SEP											
30...	10	210	--	120	13	.2	19	442	414	.60	118

DATE	NITRO- GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2) (71856)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)
OCT											
17...	.03	.03	.13	.02	.01	.03	.05	.04	.17	.10	.21
NOV											
14...	.15	.14	.62	.04	.02	.07	.19	.16	.53	.41	.68
DEC											
05...	.19	.17	.75	.06	.03	.10	.25	.20	.62	.59	.75
JAN											
10...	.06	.09	.40	.06	.03	.10	.12	.12	1.4	1.4	1.7
FEB											
05...	.03	.06	.27	.06	.02	.07	.09	.08	1.6	1.6	1.9
MAR											
04...	--	--	--	--	--	--	--	--	--	--	--
05...	.03	.03	.13	.02	.01	.03	.05	.04	1.7	1.7	2.1
20...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	.47	.35	1.6	.00	.02	.07	.47	.37	.91	.85	1.1
30...	.00	.00	<.00	.01	.00	.00	.01	.00	.07	.03	.08
JUN											
04...	.13	.16	.71	.06	.05	.16	.19	.21	.32	.24	.39
JUL											
01...	.00	.00	.00	.00	.02	.07	.00	.00	.01	.00	.01
30...	.05	.05	<.22	.02	.00	.00	.07	.05	.13	.10	.16
AUG											
26...	.03	.00	.00	.00	.03	.10	.03	.03	.21	.20	.25
SEP											
30...	.10	.05	.22	.01	.02	.07	.11	.07	.00	.02	.00

RED RIVER OF THE NORTH BASIN

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)
OCT 17...	.13	2.1	1.6	2.3	.60	1.7	2.4	10	.160	.25	.49
NOV 14...	.53	.97	1.2	1.5	.00	1.6	1.7	7.5	.160	.43	.49
DEC 05...	.76	1.2	1.4	1.8	.00	2.0	2.1	9.1	.170	.40	.52
JAN 10...	1.8	1.6	1.4	3.0	.20	2.8	3.1	14	.220	.55	.67
FEB 05...	2.1	1.3	1.3	2.9	.00	2.9	3.0	13	.230	.58	.71
MAR 04...	--	--	--	--	--	--	--	--	--	--	--
05...	2.2	1.0	.80	2.7	.20	2.5	2.8	12	.300	.89	.92
20...	--	--	--	--	--	--	--	--	--	--	--
APR 01...	1.1	1.2	1.5	2.1	.00	2.3	2.6	11	.210	.49	.64
30...	.04	1.7	1.1	1.8	.70	1.1	1.8	8.0	.130	.06	.40
JUN 04...	.31	1.1	1.4	1.4	.00	1.6	1.6	7.0	.130	.25	.40
JUL 01...	.00	1.8	.80	1.8	1.0	.80	1.8	8.0	.070	.09	.21
30...	.13	1.6	1.4	1.7	.20	1.5	1.8	7.8	.150	.46	.46
AUG 26...	.26	1.5	1.1	1.7	.40	1.3	1.7	7.7	.200	.40	.61
SEP 30...	.03	1.2	.79	1.2	.39	.81	1.3	5.8	.180	.43	.55

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DISSOL. (MG/L AS P) (00672)	PHOS-PHORUS, HYDRO. + ORTHO TOTAL (MG/L AS P) (00678)	PHOS-PHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC TOTAL (MG/L AS P) (00670)
OCT 17...	.140	.08	.12	.37	--	.01	--	.13	--
NOV 14...	.150	.14	.08	.25	.02	.06	.16	.14	.00
DEC 05...	.160	.13	.12	.37	.01	.02	.14	.14	.03
JAN 10...	.240	.18	.16	.49	.07	.07	.25	.23	.00
FEB 05...	.190	.19	.18	.55	.07	.05	.26	.23	.00
MAR 05...	.260	.29	.27	.83	--	.05	--	.32	--
APR 01...	.210	.16	.18	.55	.07	.03	.23	.21	.00
30...	.040	.02	.03	.09	.07	.00	.09	.03	.04
JUN 04...	.100	.08	.06	.18	.04	.04	.12	.10	.01
JUL 01...	.060	.03	.04	.12	.04	.01	.07	.05	.00
30...	.140	.15	.08	.25	.00	.02	.12	.10	.03
AUG 26...	.170	.13	.14	.43	.01	.00	.14	.12	.06
SEP 30...	.170	.14	.14	.43	--	--	--	--	--

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT								
17...	.01	120	160	150	10	170	60	110
NOV								
14...	.01	140	60	40	20	140	0	300
DEC								
05...	.02	130	70	50	20	430	0	450
JAN								
10...	.01	190	120	90	30	1000	0	1000
FEB								
05...	.00	180	180	150	30	2000	0	2000
MAR								
05...	.00	200	290	210	80	2100	0	2100
APR								
01...	.00	180	110	90	20	1500	0	1500
30...	.01	140	90	70	20	930	210	720
JUN								
04...	.00	160	90	70	20	510	80	430
JUL								
01...	.01	150	130	120	<10	220	190	30
30...	.04	[illegible]	130	120	<10	430	150	280
AUG								
26...	.05	170	100	90	10	490	70	420
SEP								
30...	--	150	120	110	<10	100	90	8

DATE	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)
OCT		
17...	9.6	.5
NOV		
14...	20	--
DEC		
05...	19	.2
JAN		
10...	17	--
FEB		
05...	16	.6
MAR		
05...	14	.3
APR		
01...	14	.3
30...	16	1.1
JUN		
04...	15	.3
JUL		
01...	15	1.5
30...	--	.3
AUG		
26...	9.9	.6
SEP		
30...	16	.2

05058500 SHEYENNE RIVER AT VALLEY CITY, ND

LOCATION.--Lat 46°54'50", long 98°00'30", in SE¼NW¼ sec.28, T.140 N., R.58 W., Barnes County, on left bank 100 ft (30 m) downstream from College Dam in Valley City, and at mile 253.0 (407.1 km).

DRAINAGE AREA.--7,810 mi² (20,230 km²), approximately, of which about 5,700 mi² (14,760 km²) is probably noncontributing, includes 3,800 mi² (9,840 km²) in closed basins.

PERIOD OF RECORD.--March to August 1919, March to June 1938, August 1938 to September 1975 (discharge); October 1979 to September 1980 (gage heights and annual maximum discharge only). Records for July 1938, published in WSP 855, have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,199.27 ft (365.537 m) National Geodetic Vertical Datum of 1929. March to August 1919, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum. March to Oct. 13, 1938, nonrecording gage at present site and datum.

AVERAGE DISCHARGE (UNADJUSTED).--37 years (1938-75), 124 ft³/s (3.512 m³/s) 89,840 acre-ft/yr (111 hm³/yr); median of yearly mean discharges, 97 ft³/s (2.75 m³/s), 70,300 acre-ft/yr (87 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,580 ft³/s (130 m³/s) Apr. 28, 1948, gage height, 17.51 ft (5.337 m); maximum gage height, 17.62 ft (5.371 m) Apr. 19, 1969; no flow during several periods in 1938-41.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 765 ft³/s (21.7 m³/s) Aug. 29, gage height, 7.00 ft (2.134 m).

REMARKS.--Flow regulated by Lake Ashtabula 13 mi (21 km) upstream (see station 05057500). Small diversions above station for municipal supply.

REVISIONS (WATER YEARS).--WSP 1388: 1939 (M). WSP 1728: Drainage area.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.98	4.60	2.92	2.77	2.84	2.85	5.30	2.77	2.91	3.16	2.81	3.00
2	2.97	4.58	2.86	2.76	2.84	2.85	5.31	2.81	2.89	3.15	2.82	2.95
3	2.99	4.48	2.83	2.75	2.85	2.86	5.56	2.85	2.88	3.15	2.80	3.12
4	2.96	4.47	2.80	2.76	2.85	2.85	5.52	2.86	2.93	3.08	2.82	3.37
5	2.93	4.47	2.79	2.79	2.85	2.89	5.51	2.83	2.99	3.02	2.83	3.39
6	2.87	4.67	2.80	2.88	2.85	2.95	5.44	2.80	2.99	3.00	2.95	3.39
7	2.85	4.58	2.81	2.92	2.85	3.05	5.42	2.83	3.03	2.99	2.97	3.39
8	2.85	4.85	2.77	2.89	2.85	3.20	5.00	2.86	2.97	2.95	2.89	3.40
9	2.85	4.88	2.78	2.83	2.86	3.26	4.64	2.90	2.95	2.92	2.86	3.38
10	2.84	4.85	2.80	2.81	2.86	3.22	4.53	2.92	2.93	2.88	2.87	3.84
11	2.82	4.85	2.80	2.82	2.85	3.21	3.97	2.88	2.90	2.85	2.84	4.16
12	2.82	4.91	2.78	2.85	2.85	3.20	3.13	2.88	2.89	2.82	2.82	4.31
13	2.80	4.77	2.79	2.84	2.84	3.21	3.30	2.86	2.91	2.80	2.83	4.96
14	2.80	4.75	2.78	2.84	2.84	3.21	3.30	2.85	2.89	2.83	2.81	5.02
15	2.80	4.74	2.80	2.83	2.84	3.28	3.11	2.84	2.87	2.83	2.80	5.06
16	2.81	4.48	2.77	2.84	2.84	3.31	3.07	2.83	2.87	2.84	2.87	5.40
17	2.87	3.05	2.77	2.85	2.84	3.32	3.00	2.85	2.88	2.83	2.89	5.25
18	3.85	2.88	2.80	2.84	2.84	3.55	2.91	2.87	2.93	2.88	2.86	5.01
19	3.94	2.83	2.81	2.84	2.85	5.02	2.89	2.89	2.90	2.89	2.83	4.98
20	3.87	2.90	2.81	2.84	2.86	5.36	2.87	2.89	2.90	2.89	2.97	4.95
21	4.00	2.93	2.80	2.84	2.86	4.59	2.85	2.88	2.92	2.86	2.93	4.91
22	4.08	2.95	2.79	2.84	2.85	4.37	2.87	2.87	2.99	2.84	2.86	4.90
23	4.02	2.94	2.78	2.84	2.86	3.86	2.82	2.85	3.01	2.82	2.91	4.89
24	4.02	2.92	2.78	2.84	2.86	3.82	2.81	2.84	3.04	2.83	2.88	4.01
25	4.23	2.90	2.80	2.84	2.85	4.04	2.80	2.83	3.03	2.83	2.86	3.23
26	4.32	2.88	2.77	2.84	2.85	4.08	2.78	2.87	3.08	2.82	2.85	3.39
27	4.56	2.93	2.77	2.84	2.86	3.95	2.75	2.94	3.08	2.82	2.84	3.44
28	4.32	2.94	2.76	2.83	2.85	4.04	2.74	2.96	3.14	2.83	2.85	3.44
29	4.20	2.95	2.76	2.84	2.85	4.29	2.72	2.94	3.18	2.82	4.21	3.46
30	4.33	2.98	2.76	2.83	---	4.39	2.74	2.90	3.18	2.88	3.28	3.46
31	4.48	---	2.77	2.84	---	4.79	---	2.90	---	2.82	3.11	---
TOTAL	106.83	115.91	86.61	87.77	82.64	112.87	111.66	88.85	89.06	89.93	90.72	121.46
MEAN	3.45	3.86	2.79	2.83	2.85	3.64	3.72	2.87	2.97	2.90	2.93	4.05
MAX	4.56	4.91	2.92	2.92	2.86	5.36	5.56	2.96	3.18	3.16	4.21	5.40
MIN	2.80	2.83	2.76	2.75	2.84	2.85	2.72	2.77	2.87	2.80	2.80	2.95

WTR YR 1980 TOTAL 1184.31 MEAN 3.24 MAX 5.56 MIN 2.72

05058700 SHEYENNE RIVER AT LISBON, ND

LOCATION.--Lat 46°26'49", long 97°40'44", on line between secs.1 and 2, T.134 N., R.56 W., Ransom County, Hydrologic Unit 09020204, on left bank 150 ft (46 m) downstream from dam at State Fish Hatchery at north edge of city of Lisbon, 3 mi (5 km) upstream from Timber Coulee, and at mile 162.1 (260.8 km).

DRAINAGE AREA.--8,190 mi² (21,210 km²), approximately, of which about 5,700 mi² (14,800 km²) is probably noncontributing, including 3,800 mi² (9,840 km²) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1956 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,066.46 ft (325.057 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Lake Ashtabula (station 05057500) 108.5 mi (174.6 km) upstream.

AVERAGE DISCHARGE.--24 years, 153 ft³/s (4.333 m³/s), 110,800 acre-ft/yr (137 hm³/yr); median of yearly mean discharges, 140 ft³/s (3.91 m³/s), 100,000 acre-ft/yr (123 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,270 ft³/s (149 m³/s) July 1, 1975, gage height, 19.04 ft (5.803 m); no flow Sept. 19-21, Oct. 23, 24, 1956, Aug. 16, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 760 ft³/s (21.5 m³/s) Mar. 23, gage height, 7.01 ft (2.137 m), backwater from ice; minimum daily, 7.6 ft³/s (0.22 m³/s) Aug. 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	226	30	19	15	16	399	24	22	46	8.9	178
2	27	231	31	18	15	16	411	24	24	48	9.4	139
3	26	236	32	17	15	16	*442	22	27	49	8.9	87
4	22	250	35	16	15	16	508	20	46	54	9.9	62
5	24	243	37	16	16	16	555	19	41	54	7.6	48
6	25	236	36	16	16	17	656	16	50	52	7.6	37
7	25	231	34	16	16	17	682	16	46	50	9.9	36
8	27	229	28	14	16	17	578	16	39	49	12	77
9	27	226	26	14	16	17	498	18	40	43	11	85
10	27	205	24	13	16	17	428	19	46	37	12	85
11	25	229	22	13	16	17	349	17	40	35	11	85
12	22	261	20	13	16	18	323	15	40	30	20	89
13	20	307	19	13	16	19	287	15	43	26	27	106
14	18	321	17	14	16	20	210	17	40	22	20	141
15	17	340	16	14	16	28	141	20	39	19	12	170
16	18	314	14	14	16	30	141	20	34	18	15	217
17	16	298	14	17	16	66	141	20	28	15	16	234
18	16	280	14	20	16	275	111	18	24	20	15	248
19	16	217	14	19	16	485	93	17	22	27	12	296
20	16	115	16	16	16	520	81	15	19	35	18	284
21	47	71	18	18	16	500	66	14	20	20	16	268
22	139	49	20	19	16	650	52	14	20	15	15	266
23	120	44	22	19	16	640	43	13	16	14	20	266
24	156	40	22	18	16	470	39	14	20	14	19	268
25	166	39	22	16	16	390	35	14	19	14	20	273
26	168	40	22	15	16	328	31	22	25	15	22	250
27	178	39	20	15	16	350	31	26	46	15	22	170
28	198	35	20	15	16	370	27	27	54	14	19	102
29	217	31	20	15	16	380	24	31	57	10	20	95
30	236	30	19	15	---	385	24	25	48	12	20	104
31	219	---	19	15	---	385	---	19	---	9.4	33	---
TOTAL	2284	5413	703	492	460	6491	7406	587	1044	881.4	489.2	4766
MEAN	73.7	180	22.7	15.9	15.9	209	247	18.9	34.8	28.4	15.8	159
MAX	236	340	37	20	16	650	682	31	57	54	33	296
MIN	16	30	14	13	15	16	24	13	16	9.4	7.6	36
AC-FT	4530	10740	1390	976	912	12870	14690	1160	2070	1750	970	9450

CAL YR 1979 TOTAL 147579.0 MEAN 404 MAX 4860 MIN 14 AC-FT 292700
WTR YR 1980 TOTAL 31016.6 MEAN 84.7 MAX 682 MIN 7.6 AC-FT 61520

05058700 SHEYENNE RIVER AT LISBON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1956 to current year.
WATER TEMPERATURES: August 1956 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,480 micromhos Feb. 11, 1980; minimum daily, 243 micromhos Apr. 2, 1960.
WATER TEMPERATURES: Maximum daily, 32.0°C Aug. 23, 1959; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,480 micromhos Feb. 11, minimum daily, 460 micromhos Mar. 24.
WATER TEMPERATURES: Maximum daily, 28.5°C July 10, 14; minimum daily, 0.0°C Dec. 15, 16, Jan. 8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT									
26...	1005	166	800	8.3	5.0	25	260	58	63
NOV									
27...	1515	39	825	8.2	.5	10	270	39	63
DEC									
19...	0930	14	1090	7.8	1.0	10	380	85	93
JAN									
15...	1050	14	1250	7.3	.5	15	450	120	110
FEB									
06...	1700	16	1510	8.0	.5	20	530	180	130
MAR									
20...	0920	376	550	8.0	1.0	--	190	16	43
20...	1750	431	580	--	.5	--	--	--	--
26...	1025	266	521	--	.5	--	--	--	--
APR									
01...	1735	410	541	7.9	.5	50	180	24	44
08...	1125	541	728	--	1.0	--	--	--	--
MAY									
01...	0820	24	991	8.4	16.5	10	340	80	75
JUN									
05...	1225	42	1140	8.0	20.5	25	380	110	84
JUL									
01...	1525	46	1080	8.4	23.5	30	330	93	74
31...	1130	8.7	965	8.2	24.0	45	290	43	63
AUG									
27...	1230	22	928	8.2	20.5	40	300	60	64

05058700 SHEYENNE RIVER AT LISBON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORPTION RATIO (00931)	SODIUM+ POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT									
26...	26	70	35	1.9	82	12	210	170	41
NOV									
27...	27	69	35	1.8	80	11	230	140	21
DEC									
19...	37	86	32	1.9	97	11	300	240	37
JAN									
15...	42	110	34	2.3	120	11	330	310	59
FEB									
06...	50	140	36	2.6	150	13	350	320	110
MAR									
20...	19	46	33	1.5	58	12	170	110	19
20...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
APR									
01...	18	44	33	1.4	55	11	160	100	12
08...	--	--	--	--	--	--	--	--	--
MAY									
01...	37	91	36	2.1	100	12	260	240	32
JUN									
05...	41	96	35	2.1	110	12	270	290	47
JUL									
01...	36	100	38	2.4	110	12	240	240	51
31...	33	91	39	2.3	100	12	250	200	40
AUG									
27...	34	90	38	2.3	100	11	240	200	38

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	BORON, DISSOLVED (UG/L AS B) (01020)
OCT									
26...	.2	7.8	508	517	.69	228	.03	.110	200
NOV									
27...	.2	16	499	487	.68	52.5	.36	.130	120
DEC									
19...	.3	18	717	706	.98	27.1	.67	.080	230
JAN									
15...	.4	17	895	862	1.22	33.8	.85	.060	270
FEB									
06...	.3	19	1000	998	1.36	43.2	1.2	.080	360
MAR									
20...	.1	13	408	370	E.55	414	1.2	.410	170
20...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
APR									
01...	.2	15	334	343	.45	370	.49	.240	250
08...	--	--	--	--	--	--	--	--	--
MAY									
01...	.2	12	668	656	.91	43.3	.00	.010	230
JUN									
05...	.3	12	776	745	1.06	88.0	.04	.100	280
JUL									
01...	.4	18	719	676	.98	89.3	.00	.060	300
31...	.2	19	638	609	.87	15.0	.03	.100	260
AUG									
27...	.3	17	613	599	.83	36.4	.00	.100	230

E - Estimated.

05058700 SHEYENNE RIVER AT LISBON, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	820	600	825	1150	1410	1280	500	1000	1140	1050	955	855
2	825	595	840	1160	1400	1280	515	1010	1150	1030	955	820
3	825	600	845	1150	1400	1270	535	1000	1180	1030	950	825
4	840	595	850	1180	1430	1280	540	1040	1100	1010	950	800
5	845	590	870	1190	1410	1250	565	1050	1110	1020	955	795
6	840	600	900	1190	1400	1250	610	1050	1100	1000	950	790
7	840	605	950	1200	1410	1240	645	1050	1100	975	950	790
8	845	610	975	1200	1420	1200	650	1050	1130	975	955	775
9	850	610	960	1200	1430	1200	700	1050	1120	950	925	775
10	830	625	975	1200	1430	1200	745	1090	1110	940	925	740
11	840	640	975	1230	1480	1200	750	1100	1100	940	930	700
12	850	625	970	1200	1450	1180	760	1100	1100	950	925	640
13	845	625	960	1200	1450	1200	775	1130	1100	945	925	---
14	850	605	975	1190	1400	1200	850	1130	1100	950	920	645
15	850	615	975	1300	1400	1200	850	1150	1140	950	915	650
16	845	625	965	1300	1350	1180	850	1150	1190	975	900	645
17	850	645	975	1280	1360	1180	860	1170	1190	985	900	640
18	825	645	975	1260	1350	1100	860	1160	1180	975	900	640
19	850	625	990	1230	1380	---	875	1150	1170	990	900	650
20	840	640	1000	1250	1350	---	850	1180	1150	975	860	650
21	845	655	1000	1290	1330	---	855	1180	1130	1000	860	650
22	895	650	1010	1300	1300	---	890	1180	1120	1000	860	650
23	890	670	1000	1300	1280	---	900	1150	1130	1000	860	645
24	825	700	1010	1290	1300	460	900	1130	1130	1000	870	645
25	775	750	1050	1330	1300	500	905	1130	1140	1010	890	640
26	750	775	1090	1340	1290	475	905	1130	1130	1000	880	645
27	710	775	1100	1350	1280	470	925	1150	1120	995	900	640
28	700	795	1110	1340	1300	490	950	1150	1130	990	900	650
29	660	800	1130	1350	1300	470	955	1130	1110	995	890	670
30	610	825	1150	1400	---	475	975	1130	1100	975	890	675
31	590	---	1150	1400	---	490	---	1150	---	955	885	---
MEAN	808	657	985	1260	1370	989	782	1110	1130	985	911	701

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	3.5	1.0	1.0	.5	.0	.5	20.0	23.0	23.5	23.0	18.5
2	15.5	2.5	1.0	1.0	.5	.5	1.0	20.5	21.0	24.0	25.0	18.0
3	14.0	3.0	1.0	1.0	.5	.5	1.0	17.0	21.0	24.5	23.0	20.0
4	13.0	3.0	1.5	1.0	.5	.5	1.0	23.5	21.0	23.0	22.0	18.0
5	12.0	2.0	1.5	1.0	1.0	.5	1.0	20.0	21.0	24.0	23.0	18.5
6	11.5	2.5	1.5	1.0	1.0	.5	1.0	17.5	21.0	25.5	21.0	19.0
7	11.0	1.5	1.0	.5	1.0	.5	1.5	13.5	19.5	27.0	21.5	19.0
8	11.0	1.0	1.0	.0	1.0	.5	1.0	14.5	19.5	24.5	23.5	21.5
9	10.5	.5	1.0	.5	1.0	.5	3.0	14.0	21.0	23.0	22.0	20.0
10	10.0	1.0	1.0	.5	1.0	.5	6.0	14.5	20.0	28.5	23.0	20.5
11	10.0	1.0	.5	.5	.5	.5	5.0	16.0	20.5	28.0	24.5	19.0
12	9.0	1.0	.5	1.0	.5	.5	6.5	15.5	26.5	26.0	22.0	18.5
13	8.0	.5	1.0	1.0	.5	.5	7.0	13.0	[illegible]	27.0	22.5	18.0
14	8.0	.5	1.0	1.0	.5	.5	8.5	13.5	[illegible]	28.5	21.5	17.0
15	8.5	1.0	.0	1.0	.5	.5	9.0	14.5	[illegible]	25.0	21.0	16.0
16	9.5	1.0	.0	1.0	.5	.5	10.0	15.0	24.0	25.5	19.5	16.5
17	9.0	1.0	.5	1.0	.5	.5	10.0	15.5	26.5	24.5	19.0	15.0
18	9.5	1.0	1.0	1.0	1.0	.5	13.5	16.5	20.5	25.0	21.5	14.0
19	9.0	1.0	1.5	1.0	1.0	.5	15.0	21.0	22.0	24.0	19.5	14.0
20	9.5	1.0	1.5	1.0	1.0	.5	16.0	21.0	20.5	24.0	23.0	14.5
21	8.0	1.0	1.5	1.0	1.0	.5	17.5	18.5	23.0	22.0	21.5	15.0
22	7.5	1.0	1.5	1.0	.5	.5	14.5	22.5	22.0	25.5	21.5	14.0
23	7.0	1.0	1.5	1.0	1.0	.5	15.0	19.0	21.0	26.0	21.5	13.5
24	6.5	1.0	1.5	1.0	1.0	.5	15.0	23.0	24.0	23.5	25.5	12.5
25	6.5	1.0	1.5	.5	1.0	.5	16.0	24.0	25.0	22.5	21.5	11.5
26	7.0	1.0	1.5	.5	1.0	.5	15.0	24.5	22.0	24.0	20.0	12.0
27	7.5	1.0	1.0	.5	.5	.5	15.0	24.5	22.0	23.0	19.0	12.0
28	9.0	1.0	1.0	.5	.5	.5	15.5	25.0	20.5	25.5	20.0	13.0
29	8.5	1.0	1.0	.5	.5	.5	16.0	22.5	21.5	23.0	21.0	14.0
30	7.0	1.0	1.0	.5	---	.5	18.5	22.0	23.0	24.0	21.0	15.0
31	4.0	---	1.0	.5	---	.5	---	22.0	---	24.5	19.5	---
MEAN	9.5	1.5	1.0	1.0	.5	.5	9.0	19.0	22.0	25.0	21.5	16.5

05059000 SHEYENNE RIVER NEAR KINDRED, ND

LOCATION.--Lat 46°37'35", long 97°00'05", in NE¼NW¼ sec.5, T.136 N., R.50 W., Richland County, Hydrologic Unit 09020204, on right bank 25 ft (8 m) downstream from Burlington Northern Railway bridge, 1.5 mi (2.4 km) southeast of Kindred, and at mile 68.1 (109.6 km).

DRAINAGE AREA.--8,800 mi² (22,800 km²), approximately, of which about 5,780 mi² (14,970 km²) is probably noncontributing, including 3,800 mi² (9,840 km²) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1949 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 925.55 ft (282.108 m) National Geodetic Vertical Datum of 1929. July 1949 to Sept. 30, 1962, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow regulated to a large degree by Lake Ashtabula (station 05057500) 202 mi (325 km) upstream and several small reservoirs.

AVERAGE DISCHARGE.--31 years, 197 ft³/s (5.579 m³/s), 142,700 acre-ft/yr (176 hm³/yr); median of yearly mean discharges, 154 ft³/s (4.36 m³/s), 112,000 acre-ft/yr (138 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,690 ft³/s (133 m³/s) Apr. 15, 1969, gage height, 21.03 ft (6.410 m); maximum gage height, 21.66 ft (6.602 m) July 6, 1975; minimum daily discharge, 13 ft³/s (0.37 m³/s) Nov. 13, 1955, Aug. 22-24, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Spring flood in 1947 or 1948 reached a stage of 22.1 ft (6.74 m), from floodmarks, discharge about 3,600 ft³/s (102 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 750 ft³/s (21.2 m³/s) Apr. 4, gage height, 7.92 ft (2.414 m), backwater from ice; maximum gage height, 8.52 ft (2.597 m) Mar. 26, backwater from ice; minimum daily discharge, 30 ft³/s (0.85 m³/s) Jan. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	246	100	50	40	48	565	98	59	94	37	50
2	61	258	105	48	40	48	566	94	61	87	37	48
3	60	248	105	48	40	48	630	89	61	81	37	45
4	60	239	90	48	40	48	720	83	63	78	37	84
5	60	239	78	48	40	48	700	78	70	74	37	136
6	58	241	74	48	40	48	683	74	76	72	39	116
7	56	248	74	48	40	48	670	72	98	72	56	92
8	55	235	72	48	40	48	670	70	100	72	45	74
9	55	218	72	48	40	48	699	65	96	72	40	65
10	56	208	72	48	40	48	657	61	92	70	36	59
11	54	195	70	48	40	48	563	59	81	67	39	52
12	53	214	70	48	40	48	503	56	78	65	38	78
13	52	239	70	48	40	48	440	52	78	63	39	96
14	52	265	70	40	40	48	394	52	87	59	40	96
15	52	306	70	40	40	48	366	52	98	55	40	96
16	53	338	68	40	40	48	321	50	96	52	39	100
17	53	348	67	40	40	48	263	48	116	50	45	122
18	54	345	58	35	40	49	224	48	112	50	48	146
19	56	336	54	30	40	50	212	52	102	54	50	182
20	56	321	50	30	45	150	208	56	94	61	54	201
21	56	306	50	40	48	190	193	56	83	52	59	214
22	54	252	50	40	48	300	178	56	72	48	56	242
23	54	195	50	40	48	420	162	56	67	45	54	244
24	54	160	50	40	48	450	146	56	61	56	52	241
25	85	150	50	40	48	460	134	56	59	54	50	241
26	136	150	50	40	48	530	124	54	61	48	48	241
27	152	130	50	40	48	540	116	50	89	45	45	242
28	172	115	50	40	48	520	112	50	201	40	45	244
29	176	100	50	40	48	470	104	52	140	38	48	239
30	182	100	50	40	---	490	102	54	98	40	50	195
31	204	---	50	40	---	560	---	56	---	39	52	---
TOTAL	2442	6945	2039	1321	1237	5995	11425	1905	2649	1853	1392	4281
MEAN	78.8	232	65.8	42.6	42.7	193	381	61.5	88.3	59.8	44.9	143
MAX	204	348	105	50	48	560	720	98	201	94	59	244
MIN	52	100	50	30	40	48	102	48	59	38	36	45
AC-FT	4840	13780	4040	2620	2450	11890	22660	3780	5250	3680	2760	8490

CAL YR 1979 TOTAL 169484 MEAN 464 MAX 4160 MIN 35 AC-FT 336200
WTR YR 1980 TOTAL 43484 MEAN 119 MAX 720 MIN 30 AC-FT 86250

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued
National stream-quality accounting network station

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1976 to current year.
WATER TEMPERATURES: November 1970 to September 1975, April 1976 to current year.

INSTRUMENTATION.--Water-quality monitor since September 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,280 micromhos Jan. 10, 1979; minimum, 303 micromhos Sept. 14, 1978.
WATER TEMPERATURES: Maximum, 30.5°C July 18, 19, 1977; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,220 micromhos Mar. 1, 5; mimimum, 382 micromhos June 29.
WATER TEMPERATURES: Maximum, 29.0°C July 14; minimum, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
18...	1140	54	850	8.2	8.0	2.8	11.4	99	--	42	270
NOV											
13...	1700	244	739	8.1	1.0	12	12.4	89	1300	K43	160
DEC											
06...	0915	77	801	7.8	.5	3.8	9.0	64	--	K15	150
JAN											
03...	1215	48	1050	7.9	.0	3.2	9.4	64	--	32	48
FEB											
06...	1510	40	1080	7.5	.0	1.1	4.2	30	--	66	92
MAR											
05...	1400	48	1210	7.5	.5	1.5	5.2	36	--	36	22
APR											
02...	1400	566	468	7.9	1.0	31	12.0	84	--	77	180
MAY											
01...	1500	96	859	8.3	17.0	16	10.3	107	--	K30	99
JUN											
06...	0910	75	922	8.0	18.5	23	7.6	82	--	1700	1400
25...	0945	58	796	8.2	24.5	32	6.0	72	--	120	110
AUG											
01...	0940	34	818	8.3	23.0	27	6.9	83	--	200	580
28...	0910	43	830	8.1	19.0	3.0	7.6	84	--	140	1500

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT											
18...	340	74	88	29	62	27	1.5	72	9.6	270	3.3
NOV											
13...	120	0	30	12	29	33	1.1	34	5.2	200	--
DEC											
06...	330	52	85	29	59	37	1.4	68	8.5	280	--
JAN											
03...	390	66	100	33	72	38	1.6	80	8.2	320	--
FEB											
06...	430	100	110	38	75	27	1.6	83	7.8	330	--
MAR											
05...	420	83	110	36	88	31	1.9	96	8.3	340	--
APR											
02...	160	34	41	15	31	28	41	41	9.7	130	--
MAY											
01...	340	56	85	30	54	25	1.3	62	8.3	280	--
JUN											
06...	350	90	89	31	63	28	1.5	72	9.2	260	--
25...	290	60	70	28	55	29	1.4	93	8.1	230	--
AUG											
01...	300	71	76	27	55	28	1.4	63	7.8	230	--
28...	290	32	74	26	63	31	1.6	71	8.0	260	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT										
18...	170	34	.3	19	562	576	.76	81.9	.03	.00
NOV										
13...	150	17	.2	7.9	449	372	.61	296	.22	.15
DEC										
06...	130	24	.2	22	548	528	.75	114	.32	.28
JAN										
03...	180	36	.3	23	656	647	.89	85.0	.52	.52
FEB										
06...	190	55	.3	24	708	702	.96	76.5	.69	.68
MAR										
05...	210	54	.4	24	760	740	1.03	98.5	.91	.91
APR										
02...	77	13	.2	13	284	281	.39	434	.59	.61
MAY										
01...	140	23	.2	19	495	528	.67	128	.02	.00
JUN										
06...	180	36	.3	19	605	584	.82	123	.07	.04
25...	160	27	.3	22	521	509	.71	81.6	.00	.02
AUG										
01...	130	30	.2	22	531	486	.72	48.7	.02	.02
28...	130	37	.3	22	539	517	.73	62.6	.00	.00

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)
OCT										
18...	.06	.03	.04	.76	.32	.82	.47	.35	.85	.35
NOV										
13...	.10	.05	.06	1.0	.95	1.1	.10	1.0	1.3	1.2
DEC										
06...	.18	.17	.22	.60	.72	.78	.00	.89	1.1	1.2
JAN										
03...	.14	.09	.12	1.1	.91	1.2	.20	1.0	1.7	1.5
FEB										
06...	.17	.17	.22	.61	.57	.78	.04	.74	1.5	1.4
MAR										
05...	.15	.14	.18	.85	.73	1.0	.13	.87	1.9	1.8
APR										
02...	.49	.41	.53	1.3	1.1	1.8	.30	1.5	2.4	2.1
MAY										
01...	.00	.00	.00	1.2	1.0	1.2	.20	1.0	1.2	1.0
JUN										
06...	.13	.01	.01	1.3	.53	1.4	.86	.54	1.5	.58
25...	.00	.00	.00	1.3	.57	1.3	.73	.57	1.3	.59
AUG										
01...	.01	.00	.00	1.3	1.1	1.3	.20	1.1	1.3	1.1
28...	.05	.02	.03	1.3	.52	1.3	.76	.54	1.3	.54

DATE	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT										
18...	3.8	.100	.31	.060	--	--	--	--	--	--
NOV										
13...	5.8	.130	.40	.090	--	--	--	--	--	--
DEC										
06...	4.9	.080	.25	.060	4	1	3	400	300	100
JAN										
03...	7.6	.070	.21	.020	--	--	--	--	--	--
FEB										
06...	6.5	.030	.09	.010	--	--	--	--	--	--
MAR										
05...	8.5	.070	.21	.040	4	1	3	100	0	100
APR										
02...	11	.370	1.1	.160	--	--	--	--	--	--
MAY										
01...	5.4	.120	.37	.030	--	--	--	--	--	--
JUN										
06...	6.5	.190	.58	.060	7	2	5	200	0	200
25...	5.8	.300	.92	.040	--	--	--	--	--	--
AUG										
01...	5.8	.210	.64	.080	--	--	--	--	--	--
28...	5.8	.200	.61	.090	10	1	9	100	0	200

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 18...	--	--	--	--	--	--	--	--	--	--
NOV 13...	--	--	--	--	--	--	--	--	--	--
DEC 06...	0	0	<1	0	0	0	2	0	<3	6
JAN 03...	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--
MAR 05...	0	0	<1	0	0	0	0	0	<3	8
APR 02...	--	--	--	--	--	--	--	--	--	--
MAY 01...	--	--	--	--	--	--	--	--	--	--
JUN 06...	0	0	<1	0	0	0	0	0	<3	10
25...	--	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--	--
28...	0	0	<1	0	0	0	0	0	<3	10

DATE	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)
OCT 18...	--	--	--	--	--	--	--	--	--	--
NOV 13...	--	--	--	--	--	--	--	--	--	--
DEC 06...	4	2	350	330	20	2	2	0	380	0
JAN 03...	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--
MAR 05...	8	0	300	290	<10	4	4	0	520	20
APR 02...	--	--	--	--	--	--	--	--	--	--
MAY 01...	--	--	--	--	--	--	--	--	--	--
JUN 06...	8	2	960	950	<10	7	7	0	690	590
25...	--	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--	--
28...	9	1	1600	1600	<10	9	8	1	450	430

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT 18...	--	--	--	--	--	--	--	--	--	--
NOV 13...	--	--	--	--	--	--	--	--	--	--
DEC 06...	380	.2	.1	.1	12	7	5	0	0	0
JAN 03...	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--
MAR 05...	500	.1	.1	.0	3	1	2	1	0	1
APR 02...	--	--	--	--	--	--	--	--	--	--
MAY 01...	--	--	--	--	--	--	--	--	--	--
JUN 06...	100	.1	.1	.0	10	7	3	1	1	0
25...	--	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--	--
28...	20	.0	.0	.0	6	1	5	1	1	0

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)
OCT									
18...	0	--	--	--	--	--	6.1	--	--
NOV									
13...	--	--	--	--	--	--	17	17	.0
DEC									
06...	0	0	0	20	20	<3	9.1	8.9	.2
JAN									
03...	0	--	--	--	--	--	6.4	--	--
FEB									
06...	--	--	--	--	--	--	8.9	--	--
MAR									
05...	0	0	0	20	10	9	7.4	7.1	.3
APR									
02...	0	--	--	--	--	--	13	--	--
MAY									
01...	--	--	--	--	--	--	12	--	--
JUN									
06...	0	0	0	30	30	5	--	15	1.4
25...	0	--	--	--	--	--	43	--	--
AUG									
01...	--	--	--	--	--	--	22	--	--
28...	0	0	0	30	20	7	--	16	1.6

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT									
18...	--	--	--	--	--	--	28	4.1	59
NOV									
13...	2100	--	--	--	--	--	39	26	91
DEC									
06...	--	--	--	--	--	--	12	2.5	82
JAN									
03...	--	.630	.550	.590	.000	--	--	--	--
FEB									
06...	--	--	--	--	--	--	35	3.8	48
MAR									
05...	130	--	--	--	--	--	36	4.7	41
APR									
02...	--	--	--	--	--	--	96	147	93
MAY									
01...	32000	--	--	--	--	--	35	9.1	91
JUN									
06...	54000	2.91	1.91	14.8	2.48	36	51	10	92
25...	59000	3.62	3.15	.120	.000	20	80	13	98
AUG									
01...	73000	8.82	7.64	.410	.110	38	76	7.0	100
28...	130000	6.54	5.59	.290	.000	28	76	8.8	99

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	820	800	814	790	832	823	1040	1030	1120	1110	1220	1220
2	815	799	807	713	842	828	1040	1030	1110	1110	1200	1190
3	831	814	716	705	861	842	1040	1030	1110	1100	1200	1190
4	836	820	719	707	870	861	1040	1040	1110	1100	1210	1200
5	841	825	710	692	880	870	1040	1040	1100	1100	1220	1200
6	847	825	698	690	875	875	1050	1040	1100	1080	1160	1140
7	847	836	700	693	880	875	1050	1040	1080	1070	1150	1140
8	846	835	699	689	896	880	1020	1020	1080	1060	1150	1140
9	841	824	705	698	908	896	1020	1020	1080	1070	1140	1130
10	841	835	712	701	918	896	1030	1020	1080	1080	1140	1130
11	846	835	726	719	924	918	1030	1020	1090	1080	1130	1120
12	846	829	733	725	935	918	---	---	1100	1090	1120	1110
13	834	829	746	736	940	934	---	---	1100	1080	1130	1110
14	840	823	754	746	952	940	1020	1020	1110	1100	1130	1110
15	851	834	750	746	958	952	1020	992	1120	1120	1130	1110
16	856	845	746	739	958	946	1000	997	1120	1120	1110	1100
17	850	839	746	735	964	958	1000	1000	1130	1110	1100	1080
18	850	845	743	732	970	958	1000	987	1130	1120	1080	1050
19	858	825	734	727	970	970	985	978	1130	1120	1050	998
20	850	817	734	723	976	964	983	983	---	---	990	642
21	858	852	727	723	976	970	988	988	---	---	662	639
22	871	860	724	723	982	976	1010	992	1150	1150	683	658
23	874	869	742	732	986	976	1010	1000	1160	1150	718	672
24	877	871	753	745	988	982	1020	1010	1160	1150	707	569
25	879	874	761	753	1000	988	1040	1030	1180	1170	568	535
26	924	876	773	761	1010	1000	1050	1030	1190	1170	544	536
27	971	933	789	773	1030	964	1070	1050	1190	1180	533	509
28	981	929	793	789	1030	1020	1080	1060	1190	1180	504	488
29	944	932	807	793	1030	1030	1090	1080	1210	1190	485	474
30	952	898	823	806	1030	1030	1090	1080	---	---	484	473
31	901	816	---	---	1030	1020	1110	1090	---	---	481	464
MONTH	981	799	823	689	1030	823	1110	978	1210	1060	1220	464

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	471	465	886	860	994	935	761	723	833	818	855	830
2	480	468	890	857	1000	982	784	704	847	828	871	855
3	494	482	889	836	999	981	984	792	852	837	866	840
4	506	494	822	770	1000	957	1060	989	868	852	866	835
5	523	504	827	803	974	922	1070	1040	863	837	965	872
6	557	526	838	814	928	917	1080	1050	847	827	971	953
7	599	563	825	819	927	900	1070	1010	823	582	953	883
8	630	605	830	812	921	899	1020	998	739	615	883	850
9	643	616	841	823	955	916	1030	1000	781	743	856	840
10	665	635	845	827	973	949	1040	1000	803	785	850	826
11	693	657	850	838	991	967	1030	994	822	781	836	807
12	714	689	861	837	1000	972	1010	980	822	808	807	776
13	737	710	866	848	1000	972	999	961	812	798	817	789
14	757	719	871	853	990	948	971	941	812	781	817	785
15	782	748	876	852	954	920	976	940	850	794	817	798
16	800	772	880	868	919	872	945	927	850	841	807	785
17	818	779	897	879	908	862	944	920	836	821	785	768
18	837	808	908	878	1000	913	931	896	836	802	772	751
19	857	827	907	877	1010	953	918	906	900	831	747	643
20	871	855	918	900	964	929	905	867	905	888	693	643
21	880	855	935	917	929	785	893	877	888	811	693	682
22	910	876	953	940	785	745	897	770	816	806	682	640
23	912	892	965	952	789	765	852	756	821	811	679	646
24	915	895	977	967	805	792	857	841	840	816	686	676
25	918	891	981	968	827	796	877	855	840	816	686	682
26	913	893	986	966	840	826	893	876	835	820	686	679
27	917	889	991	958	839	816	892	875	830	820	690	683
28	913	845	989	964	842	390	874	858	835	820	694	686
29	909	841	961	925	570	382	873	856	830	811	698	683
30	897	864	948	936	728	487	861	783	830	801	709	698
31	---	---	953	941	---	---	829	756	835	825	---	---
MONTH	918	465	991	770	1010	382	1080	704	905	582	971	640

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.5	13.0	4.5	4.0	1.0	.5	.0	.0	.0	.0	.5	.5
2	13.5	12.5	4.0	3.5	1.0	.5	.0	.0	.0	.0	.5	.5
3	13.0	11.5	4.0	3.0	.5	.5	.0	.0	.0	.0	.5	.5
4	11.5	10.0	3.5	3.0	.5	.5	.0	.0	.0	.0	.5	.5
5	10.5	10.0	2.5	2.0	.5	.5	.0	.0	.0	.0	.5	.5
6	10.0	9.0	2.5	1.5	.5	.5	.0	.0	.0	.0	1.0	1.0
7	9.5	9.0	1.5	1.0	.5	.5	.0	.0	.0	.0	1.0	1.0
8	10.0	9.5	1.0	1.0	.5	.5	.0	.0	.0	.0	1.0	1.0
9	9.0	8.0	1.0	1.0	.5	.5	.0	.0	.0	.0	1.0	.5
10	8.5	8.0	1.0	1.0	.5	.5	.0	.0	.0	.0	1.0	1.0
11	8.5	8.0	1.0	1.0	.5	.5	.0	.0	.0	.0	1.0	1.0
12	8.0	6.0	1.0	1.0	.5	.5	.0	.0	.0	.0	1.0	.5
13	6.0	5.0	1.0	1.0	.5	.5	.0	.0	.0	.0	1.0	.5
14	6.5	5.0	1.0	1.0	.5	.5	.0	.0	.0	.0	.5	.5
15	7.5	6.0	1.0	1.0	.5	.5	.0	.0	.0	.0	.5	.5
16	8.5	7.5	1.0	1.0	.5	.5	.0	.0	.0	.0	.5	.5
17	8.5	8.0	1.0	1.0	.5	.5	.0	.0	.0	.0	.5	.5
18	9.0	7.5	1.0	1.0	.5	.5	.0	.0	.0	.0	.5	.5
19	8.5	8.0	1.0	1.0	.5	.5	.0	.0	.0	.0	.5	.5
20	10.0	8.0	1.0	1.0	.5	.0	.0	.0	---	---	.5	.5
21	9.5	8.0	1.0	1.0	.5	.0	.0	.0	---	---	.5	.5
22	8.0	7.0	1.0	.5	.5	.0	.0	.0	.5	.5	.5	.5
23	6.5	6.0	1.0	1.0	.5	.0	.0	.0	.5	.5	.5	.0
24	6.5	6.0	1.0	1.0	.5	.0	.0	.0	.5	.5	.5	.0
25	6.0	5.0	1.0	.5	.5	.0	.0	.0	.5	.5	.5	.5
26	6.0	5.0	1.0	.5	.0	.0	.0	.0	.5	.5	.5	.5
27	7.5	6.0	1.0	.5	.0	.0	.0	.0	.5	.5	.5	.5
28	7.5	6.5	1.0	.5	.0	.0	.0	.0	.5	.5	.5	.5
29	7.5	7.0	1.0	.5	.0	.0	.0	.0	.5	.5	1.0	.5
30	7.5	7.5	1.0	.5	.0	.0	.0	.0	---	---	1.0	.5
31	7.5	5.0	---	---	.0	.0	.0	.0	---	---	1.0	.5
MONTH	13.5	5.0	4.5	.5	1.0	.0	.0	.0	.5	.0	1.0	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1.0	1.0	18.0	15.5	20.5	19.0	22.0	20.5	23.5	22.5	17.5	17.0
2	1.0	1.0	19.0	16.0	20.5	19.0	23.5	20.5	23.5	21.0	17.5	16.5
3	1.0	.5	19.5	17.0	20.5	18.0	24.5	22.0	23.5	22.5	20.0	17.0
4	1.0	.5	20.0	17.5	20.5	19.0	25.5	23.0	23.0	21.0	19.0	17.5
5	3.0	.5	20.0	17.5	19.5	18.5	25.5	23.5	21.5	20.0	18.5	17.0
6	4.0	2.5	17.5	15.0	19.5	18.5	25.5	23.5	21.0	20.5	20.0	17.5
7	4.0	3.5	15.0	10.5	19.5	17.0	26.0	24.5	21.0	16.0	22.0	20.0
8	3.5	3.0	12.5	9.5	18.5	16.0	26.0	23.5	21.5	17.5	23.0	21.5
9	4.0	3.0	14.0	11.0	20.5	17.0	25.0	22.0	21.5	21.0	22.0	19.0
10	4.0	3.0	14.5	13.0	21.5	19.0	27.5	24.5	22.0	20.5	19.5	17.5
11	4.5	3.5	14.0	12.0	22.5	20.0	28.5	26.0	22.5	21.0	18.5	17.0
12	5.0	3.5	13.5	12.0	24.0	21.5	28.0	26.0	22.5	21.5	17.0	17.0
13	6.0	4.0	13.5	12.0	24.5	22.5	28.0	26.0	23.0	21.0	17.0	15.5
14	7.0	5.0	13.0	12.0	23.5	21.5	29.0	26.5	23.0	21.5	16.0	15.0
15	8.0	6.0	14.5	11.5	23.5	20.5	28.0	24.5	22.5	21.5	16.5	15.5
16	8.5	7.0	15.5	13.5	21.0	19.0	25.5	23.0	21.5	18.5	16.0	14.5
17	10.5	8.0	16.0	15.0	23.0	20.5	25.0	24.0	18.0	17.5	14.5	13.0
18	12.0	9.5	17.0	15.0	23.0	20.0	25.5	23.0	20.5	17.0	13.5	13.0
19	13.5	11.0	19.5	16.5	21.0	18.5	25.0	23.0	23.5	20.5	13.5	13.0
20	15.5	12.5	20.0	17.5	21.0	19.5	23.0	21.5	24.0	23.0	14.0	13.0
21	16.5	14.0	21.0	19.0	21.5	19.0	22.0	21.0	23.0	21.5	15.0	13.0
22	16.5	15.5	22.5	20.5	24.0	21.0	23.0	20.5	23.0	21.0	14.5	14.0
23	15.5	13.0	22.5	20.5	25.5	23.0	25.0	22.0	23.0	22.0	13.5	12.0
24	14.5	12.5	23.0	21.0	25.5	24.5	25.0	23.5	24.5	22.5	12.0	11.5
25	14.0	12.0	23.5	21.5	26.5	24.0	24.0	22.5	25.0	23.0	11.5	11.0
26	14.5	13.0	24.0	22.0	26.0	22.0	23.5	21.5	23.0	19.5	11.5	10.0
27	15.5	12.5	25.0	22.5	22.0	20.5	23.5	22.0	20.0	18.0	11.5	10.5
28	16.0	13.5	24.0	23.0	20.5	17.5	25.0	22.5	19.5	18.5	12.5	11.0
29	16.5	14.0	23.0	22.0	19.5	17.0	25.0	23.0	20.5	19.5	14.0	12.5
30	17.0	15.0	22.5	20.5	20.5	18.5	25.5	23.5	20.5	19.5	15.0	14.0
31	---	---	20.5	19.5	---	---	24.5	23.5	20.0	18.0	---	---
MONTH	17.0	.5	25.0	9.5	26.5	16.0	29.0	20.5	25.0	16.0	23.0	10.0

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

DATE	NOV 15,79	MAR 5,80	MAY 1,80	JUN 6,80
TIME	1700	1400	1500	0910
TOTAL CELLS/ML	2100	130	32000	54000
DIVERSITY: DIVISION	1.2	0.5	1.7	1.7
.CLASS	1.2	0.5	2.1	1.7
..ORDER	1.5	0.5	2.2	2.1
...FAMILY	2.1	0.5	2.2	2.7
....GENUS	2.6	0.5	2.3	3.5

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	3100	6
...OOCYSTACEAE								
....ANKISTRODESMUS	26	1	--	-	--	-	1100	2
....CHODATELLA	--	-	--	-	--	-	380	1
....DICTYOSPHAERIUM	--	-	--	-	6600#	20	14000#	25
....GLOEOACTINIUM	--	-	--	-	--	-	3200	6
....KIRCHNERIELLA	--	-	--	-	790	2	*	0
....OOCYSTIS	--	-	--	-	--	-	1100	2
....SELENASTRUM	--	-	--	-	--	-	570	1
....TREUBARIA	--	-	--	-	--	-	380	1
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	760	1
....SCENEDESMUS	52	2	--	-	--	-	2300	4
....TETRASTRUM	--	-	--	-	--	-	2300	4
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	15	1	--	-	260	1	380	1
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	260	12	14	11	--	-	7600	14
....MELOSIRA	--	-	--	-	--	-	--	-
....STEPHANODISCUS	410#	20	--	-	12000#	38	--	-
..PENNALES								
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	65	3	--	-	--	-	2300	4
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...CHROMULINACEAE								
....CHRYSOCOCCUS	--	-	--	-	3700	11	--	-
.XANTHOPHYCEAE								
..HETEROCOCCALES								
...CENTRITRACTACEAE								
....CENTRITRACTUS	--	-	--	-	--	-	--	-
...CHLOROTHECIACEAE								
....OPHIOCYTIUM	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	530	2	*	0
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	1600	5	760	1
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	52	2	110#	85	6600#	20	8800#	16
....COCCOCHLORIS	--	-	--	-	--	-	--	-
....GOMPHOSPHAERIA	--	-	--	-	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	160	7	--	-	--	-	--	-
....APHANIZOMENON	310	15	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	780#	37	--	-	--	-	3100	6
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	*	0
....PHACUS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	2100	4

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05059000 SHEYENNE RIVER NEAR KINDRED, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

DATE	JUN 25,80		AUG 1,80		AUG 28,80	
TIME	0945		0940		0910	
TOTAL CELLS/ML	59000		73000		130000	
DIVERSITY: DIVISION	1.6		1.5		1.3	
.CLASS	1.7		1.5		1.4	
..ORDER	2.1		1.8		1.4	
...FAMILY	2.7		2.4		1.8	
....GENUS	3.6		3.7		2.5	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...COELASTRACEAE						
....COELASTRUM	--	-	1200	2	--	-
...MICRACTINIACEAE						
....GOLENKINIA	2700	4	--	-	--	-
....MICRACTINIUM	3000	5	--	-	1200	1
...OOCYSTACEAE						
....ANKISTRODESMUS	1800	3	580	1	990	1
....CHODATELLA	890	1	*	0	--	-
....DICTYOSPHAERIUM	1200	2	6900	9	2700	2
....GLOEOACTINIUM	--	-	1200	2	--	-
....KIRCHNERIELLA	--	-	--	-	58000#	43
....OOCYSTIS	*	0	1200	2	*	0
....SELENASTRUM	--	-	*	0	--	-
....TREUBARIA	*	0	*	0	*	0
...SCENEDESMACEAE						
....ACTINASTRUM	4700	8	--	-	--	-
....CRUCIGENIA	--	-	13000#	18	6900	5
....SCENEDESMUS	4100	7	4000	6	2500	2
....TETRASTRUM	2400	4	4600	6	*	0
..TETRASPORALES						
...COCCOMYXACEAE						
....ELAKATOTHRIX	--	-	580	1	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	*	0	1400	2	*	0
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	13000#	21	4900	7	3000	2
....MELOSIRA	4700	8	580	1	990	1
....STEPHANODISCUS	--	-	--	-	--	-
..PENNALES						
...FRAGILARIACEAE						
....SYNEDRA	--	-	580	1	--	-
...NAVICULACEAE						
....NAVICULA	--	-	--	-	*	0
...NITZSCHIACEAE						
....NITZSCHIA	2400	4	2900	4	2500	2
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
...CHROMULINACEAE						
....CHRYSOCOCCUS	--	-	--	-	990	1
.XANTHOPHYCEAE						
..HETEROCOCCALES						
...CENTRITRACTACEAE						
....CENTRITRACTUS	--	-	--	-	*	0
...CHLOROTHECIACEAE						
....OPHIOCYTIUM	*	0	*	0	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	--	-	*	0
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	580	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	--	-	--	-	16000	12
....ANACYSTIS	8300	14	8600	12	36000#	27
....COCCOCHLORIS	3600	6	12000#	16	--	-
....GOMPHOSPHAERIA	--	-	6900	9	--	-
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	--	-
....APHANIZOMENON	--	-	--	-	--	-
...OSCILLATORIACEAE						
....OSCILLATORIA	5000	8	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	*	0
....PHACUS	--	-	--	-	*	0
....TRACHELOMONAS	590	1	580	1	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05059400 SHEYENNE RIVER NEAR HORACE, ND

LOCATION.--Lat 46°48'13", long 96°54'13", in NW¼NW¼ sec.5, T.138 N., R.49 W., Cass County, Hydrologic Unit 09020204, at bridge on county road 3 mi (5 km) north and 0.1 mi (0.2 km) east of Horace.

DRAINAGE AREA.--8,850 mi^2 (22,920 km^2), approximately, of which about 5,780 mi^2 (14,970 km^2) is probably noncontributing, including 3,800 mi^2 (6,100 km^2) in closed basins.

PERIOD OF RECORD.--October 1979 to September 1980 (gage heights and annual maximum discharge).

GAGE.--Water-stage recorder. Datum of gage is 888.94 ft (270.949 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated to a large degree by Lake Ashtabula (station 05057500) 241 mi (388 km) upstream. Above 3,000 ft^3/s (84.96 m^3/s) overflow occurs upstream between Kindred and Horace. This overflow bypasses the station by flowing into the Maple River to the west and into the Wild Rice River to the east.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 800 ft^3/s (22.7 m^3/s) Apr. 7, gage height, 12.86 ft (3.920 m), backwater from ice; minimum not determined.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.86	---	5.76	5.62	---	6.52	12.56	5.65	5.03	5.73	4.59	4.72
2	4.87	---	5.77	5.62	---	6.54	12.52	5.59	5.07	5.40	4.52	4.75
3	4.88	---	5.78	5.63	---	6.55	12.66	5.50	5.09	5.28	4.48	4.72
4	4.88	---	5.77	5.64	---	6.50	12.64	5.42	5.23	5.27	4.47	4.67
5	4.89	---	5.72	5.64	---	6.52	12.68	5.36	5.26	5.17	4.44	4.80
6	4.88	---	5.68	5.66	---	6.53	12.63	5.34	5.25	5.10	4.44	5.82
7	4.88	7.41	5.71	5.69	5.94	6.52	12.76	5.29	5.30	5.05	4.46	5.78
8	4.90	---	5.73	5.64	6.00	6.52	11.92	5.25	5.45	5.03	4.72	5.49
9	4.91	---	5.73	5.59	6.05	6.52	10.67	5.21	5.62	5.04	4.64	5.24
10	4.90	---	5.69	5.60	6.09	6.54	10.71	5.19	5.55	5.04	4.57	5.08
11	4.91	---	5.71	5.58	6.12	6.54	10.43	5.16	5.45	5.04	4.50	4.96
12	4.91	---	5.65	5.52	6.14	6.56	9.84	5.15	5.38	5.02	4.47	5.00
13	4.91	---	5.58	5.63	6.16	6.58	9.40	5.12	5.27	4.99	4.54	5.19
14	---	8.41	5.53	5.65	6.18	6.60	9.05	5.10	5.24	4.95	4.48	---
15	---	---	5.52	5.67	6.20	6.62	8.67	5.10	5.35	4.90	4.48	---
16	---	---	5.52	5.65	6.21	6.64	8.31	5.09	5.53	4.85	4.48	5.85
17	---	7.91	5.44	5.64	6.25	6.65	7.94	5.08	5.52	4.80	4.48	---
18	---	7.63	5.44	5.64	6.27	6.68	7.54	5.05	5.69	4.85	4.51	---
19	---	7.56	5.44	5.65	6.28	6.72	7.12	5.05	5.72	4.78	4.68	---
20	---	7.60	5.44	5.69	6.29	6.74	6.90	5.06	5.46	4.76	4.76	---
21	---	7.61	5.43	5.72	6.31	6.76	6.68	5.07	5.29	4.86	4.80	---
22	---	7.86	5.44	---	6.31	6.81	6.52	5.06	5.16	4.84	4.82	---
23	---	7.75	5.46	---	6.33	7.16	6.35	5.02	5.06	4.76	4.83	7.40
24	---	7.18	5.51	---	6.34	---	6.20	4.98	4.99	4.74	4.79	---
25	---	6.71	5.55	---	6.37	---	6.07	4.96	4.93	4.76	4.72	---
26	---	6.50	5.57	---	6.40	---	5.96	4.95	4.88	4.77	4.67	---
27	---	6.42	5.58	---	6.41	13.95	5.88	4.92	4.92	4.71	4.64	---
28	---	6.16	5.59	---	6.44	14.08	5.77	4.86	5.04	4.67	4.58	---
29	---	5.98	5.60	---	6.46	13.41	5.71	4.86	6.65	4.62	4.61	7.47
30	---	5.85	5.62	---	---	12.93	5.67	4.88	6.39	4.57	4.62	---
31	---	---	5.62	---	---	12.44	---	4.96	---	4.57	4.67	---
TOTAL	---	---	173.57	---	---	---	267.76	159.28	160.77	152.92	142.46	---
MEAN	---	---	5.60	---	---	---	8.93	5.14	5.36	4.93	4.60	---
MAX	---	---	5.78	---	---	---	12.76	5.65	6.65	5.73	4.83	---
MIN	---	---	5.43	---	---	---	5.67	4.86	4.88	4.57	4.44	---

05059500 SHEYENNE RIVER AT WEST FARGO, ND

LOCATION.--Lat 46°53'28", long 96°54'24", in SE¼SE¼ sec.31, T.140 N., R.49 W., Cass County, Hydrologic Unit 09020204, on right bank at downstream side of county highway bridge, 1 mi (2 km) north of West Fargo, 3 mi (5 km) upstream from Maple River, and at mile 24.5 (39.4 km).

DRAINAGE AREA.--8,870 mi² (22,970 km²), approximately, of which about 5,780 mi² (14,970 km²) is probably noncontributing, including 3,800 mi² (9,840 km²) in closed basins.

PERIOD OF RECORD.--March to November 1902 (gage heights only), April 1903 to October 1905, March to August 1919, September 1929 to current year. Published as "at or near Haggart" 1902-7, 1919. Records for March to November 1902 and November 1905 to June 1907, published in WSP 100, 171, 207, and 245, have been found to be unreliable and should not be used. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1388: 1904(M). WSP 1728: Drainage area. See also "PERIOD OF RECORD."

GAGE.--Water-stage recorder. Datum of gage is 877.19 ft (267.368 m) National Geodetic Vertical Datum of 1929. June 27, 1933 to September 1969 on left bank about 600 ft (180 m) downstream on unimproved channel at same datum. See WSP 1728 or 1913 for history of changes prior to June 27, 1933.

REMARKS.--Records fair. Flow regulated to a large degree by Lake Ashtabula (station 05057500) 246 mi (396 km) upstream. Above 3,000 ft³/s (84.96 m³/s) overflow occurs upstream between Kindred and West Fargo. This overflow bypasses the station in the Maple River basin and drain 21 to the west and in the Wild Rice River basin to the east. This overflow is not included in the flow for this station. Some small diversions for municipal supply. Figures of daily discharge do not include diversions to the Red River of the North; however, there were no diversions during the 1978 water year.

AVERAGE DISCHARGE (ADJUSTED).--53 years (water years 1904-5, 1930-80), 173 ft³/s (4.899 m³/s), 125,300 acre-ft/yr (154 hm³/yr); median of yearly mean discharges, 146 ft³/s (4.13 m³/s), 106,000 acre-ft/yr (131 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,480 ft³/s (98.6 m³/s) Apr. 21, 1979, gage height, 22.12 ft (6.742 m), backwater from Red and/or Maple Rivers; maximum gage height, 22.25 ft (6.782 m) July 5, 1975, backwater from Red and/or Maple Rivers; minimum daily, 1.0 ft³/s (0.028 m³/s) Sept. 23, 1976, caused by diversion to Red River of the North.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 825 ft³/s (23.4 m³/s) Apr. 8, gage height, 11.55 ft (3.520 m); maximum gage height, 13.99 ft (4.264 m) Mar. 28, backwater from ice; minimum daily, 32 ft³/s (0.91 m³/s) Jan. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	193	129	52	48	52	568	100	64	146	42	47
2	53	213	107	50	48	52	549	97	64	108	41	49
3	55	234	100	50	48	52	564	94	66	89	37	49
4	54	235	94	50	48	52	551	90	80	87	36	48
5	56	221	85	50	48	52	600	84	87	81	36	45
6	55	217	75	50	48	52	678	81	81	74	36	102
7	55	221	75	50	48	52	748	78	82	70	36	134
8	58	216	76	50	48	52	798	74	89	68	41	110
9	59	176	74	50	50	52	798	70	105	68	49	87
10	59	223	71	50	50	52	775	67	108	68	42	73
11	58	201	71	50	50	52	750	64	100	69	39	70
12	56	222	70	50	50	52	725	60	96	68	37	78
13	56	218	68	50	50	52	675	56	86	66	43	73
14	59	233	66	46	50	52	600	56	78	64	40	90
15	60	246	66	42	50	52	550	56	80	61	38	101
16	61	278	65	42	50	52	475	54	96	59	38	98
17	61	324	65	42	50	52	342	52	102	55	37	102
18	64	344	64	32	50	52	296	52	111	59	38	109
19	65	342	58	35	50	52	251	54	126	55	43	133
20	64	347	57	35	50	53	229	59	109	53	55	164
21	64	336	56	37	52	54	220	59	90	55	62	193
22	64	362	53	40	52	55	209	59	79	57	54	208
23	62	320	52	40	52	55	192	64	70	53	56	237
24	61	250	52	42	52	100	179	63	65	50	55	254
25	60	221	52	45	52	225	167	60	61	50	51	251
26	58	176	52	45	52	390	156	58	58	51	47	248
27	88	169	52	45	52	448	135	57	59	50	46	249
28	131	178	52	46	52	458	125	55	59	48	43	252
29	153	160	52	46	52	499	115	56	149	45	50	254
30	166	148	52	46	---	642	105	56	204	42	45	254
31	183	---	52	48	---	597	---	59	---	41	45	---
TOTAL	2251	7224	2113	1406	1452	4564	13125	2044	2704	2010	1358	4162
MEAN	72.6	241	68.2	45.4	50.1	147	438	65.9	90.1	64.8	43.8	139
MAX	183	362	129	52	52	642	798	100	204	146	62	254
MIN	53	148	52	32	48	52	105	52	58	41	36	45
AC-FT	4460	14330	4190	2790	2880	9050	26030	4050	5360	3990	2690	8260

CAL YR 1979 TOTAL 156029 MEAN 427 MAX 3480 MIN 35 AC-FT 309500
WTR YR 1980 TOTAL 44413 MEAN 121 MAX 798 MIN 32 AC-FT 88090

05059600 MAPLE RIVER NEAR HOPE, ND

LOCATION.--Lat 47°19'30", long 97°47'25", in NW¼NW¼ sec.4, T.144 N., R.56 W., Steele County, Hydrologic Unit 09020205, 100 ft (30 m) downstream from box culvert on State Highway 38, 500 ft (152 m) east of the intersection of State Highways 32 and 38, and 3 mi (5 km) west of Hope.

DRAINAGE AREA.--20.2 mi^2 (52.3 km^2), of which about 2.8 mi^2 (7.3 km^2) is probably noncontributing.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,296.62 ft (395.210 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--16 years, 2.95 ft^3/s (0.084 m^3/s), 2,140 acre-ft/yr (2.64 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 900 ft^3/s (25.5 m^3/s) Apr. 18, 1979, gage height, 5.86 ft (1.786 m), backwater from ice; no flow for many months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33 ft^3/s (0.93 m^3/s) Mar. 29, gage height, 3.18 ft (0.969 m), backwater from ice, no peak above base of 50 ft^3/s (1.42 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	9.8	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	7.2	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	6.7	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	5.7	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	4.7	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	3.9	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	2.8	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	2.3	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	1.7	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	1.3	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.78	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.10	.01	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	5.0	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	30	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	27	.00	.00	.00	.00	.25	.00
31	.00	---	.00	.00	---	18	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	80.42	63.21	.00	.00	.00	.25	.00
MEAN	.000	.000	.000	.000	.000	2.59	2.11	.000	.000	.000	.008	.000
MAX	.00	.00	.00	.00	.00	30	14	.00	.00	.00	.25	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	160	125	.00	.00	.00	.5	.00

CAL YR 1979 TOTAL 1745.16 MEAN 4.78 MAX 500 MIN .00 AC-FT 3460
WTR YR 1980 TOTAL 143.88 MEAN .39 MAX 30 MIN .00 AC-FT 285

05059700 MAPLE RIVER NEAR ENDERLIN, ND

LOCATION.--Lat 46°37'18", long 97°34'25", on west line sec.2, T.136 N., R.55 W., Ransom County, Hydrologic Unit 09020205, on left bank 25 ft (8 m) downstream from county highway bridge, 1 mi (1.6 km) downstream from South Branch, and 1.2 mi (1.9 km) east of Enderlin.

DRAINAGE AREA.--843 mi² (2,180 km²), of which about 47 mi² (122 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1956 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,056.72 ft (322.088 m) National Geodetic Vertical Datum of 1929. Sept. 21, 1956 to June 9, 1969, recording gage on right bank at same datum. Prior to Sept. 20, 1956, nonrecording gage at site 25 ft (8 m) upstream at same datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--24 years, 35.7 ft³/s (1.011 m³/s), 25,860 acre-ft/yr (31.9 hm³/yr); median of yearly mean discharges, 23 ft³/s (0.65 m³/s), 16,700 acre-ft/yr (21 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,610 ft³/s (216 m³/s) June 30, 1975, gage height, 15.41 ft (4.697 m); minimum daily, 0.1 ft³/s (0.003 m³/s) Dec. 7-9, 1963.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.83 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 19	--	*250	7.08	a6.07	1.850	Apr. 4	2315	174	4.93	5.36	1.634

Minimum daily discharge, 1.8 ft³/s (0.05 m³/s) Sept. 5.

a - Backwater from ice

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	4.2	3.2	2.7	2.6	2.2	93	9.6	3.0	4.7	4.5	2.7
2	2.5	4.2	3.2	2.7	2.6	2.2	136	9.4	3.0	4.9	4.5	2.6
3	2.4	4.2	3.2	2.7	2.6	2.2	155	9.4	3.0	4.4	4.0	2.4
4	2.4	4.0	3.2	2.7	2.6	2.2	165	9.0	4.0	3.6	3.8	1.9
5	2.4	3.6	3.2	2.7	2.6	2.2	174	9.5	5.0	3.2	3.2	1.8
6	2.4	3.6	3.2	2.7	2.6	2.2	167	8.1	4.2	2.8	3.2	1.9
7	2.4	3.6	3.2	2.7	2.6	2.2	144	7.9	5.4	2.7	3.8	2.3
8	2.4	3.6	3.2	2.7	2.6	2.2	125	7.7	7.4	2.6	2.8	2.3
9	2.5	3.6	3.2	2.7	2.6	2.2	114	7.2	7.6	2.6	2.7	2.4
10	2.6	3.6	3.2	2.7	2.6	2.2	105	7.0	7.5	2.6	2.7	3.2
11	2.8	3.6	3.2	2.7	2.6	2.2	95	6.9	6.9	2.6	2.7	2.7
12	3.5	3.6	3.0	2.7	2.6	2.2	84	6.6	6.5	2.6	2.7	2.6
13	3.6	3.6	3.0	2.6	2.6	2.2	76	6.3	6.1	2.6	2.7	2.7
14	3.6	3.6	3.0	2.6	2.6	2.5	68	5.2	5.5	2.6	2.6	2.7
15	3.6	3.6	3.0	2.6	2.6	5.0	60	5.0	4.7	2.6	2.6	2.4
16	3.6	3.6	3.0	2.6	2.6	5.0	52	4.8	4.9	2.6	2.8	2.4
17	3.6	3.6	3.0	2.6	2.6	10	45	5.3	6.2	2.4	2.9	2.4
18	3.6	3.6	3.0	2.6	2.6	30	40	5.6	4.5	6.9	2.9	2.3
19	3.6	3.6	2.8	2.6	2.6	150	37	5.3	4.0	8.5	2.9	2.4
20	3.6	3.6	2.7	2.6	2.6	150	33	4.7	3.2	5.9	3.0	2.3
21	3.6	3.6	2.7	2.6	2.6	92	29	4.4	3.2	5.3	2.7	2.3
22	3.6	3.6	2.7	2.6	2.6	64	26	4.1	3.2	5.3	2.6	2.3
23	3.6	3.6	2.7	2.6	2.6	44	23	4.0	3.2	4.0	2.4	2.1
24	3.2	3.6	2.7	2.6	2.5	39	21	4.0	2.5	3.5	2.4	3.6
25	2.9	3.6	2.7	2.6	2.4	40	20	4.0	2.6	3.6	2.4	4.5
26	2.9	3.6	2.7	2.6	2.4	76	18	4.0	2.5	3.6	2.4	4.7
27	2.9	3.6	2.7	2.6	2.4	90	16	4.0	2.7	3.6	2.4	4.2
28	2.9	3.6	2.7	2.6	2.4	85	14	4.0	2.7	3.6	2.7	4.2
29	2.9	3.6	2.7	2.6	2.2	89	13	4.0	2.8	3.6	3.3	4.0
30	2.9	3.4	2.7	2.6	---	82	12	2.9	4.5	3.8	2.9	3.8
31	3.6	---	2.7	2.6	---	73	---	3.0	---	3.8	2.9	---
TOTAL	94.7	110.0	91.4	81.8	74.1	1155.1	2160	182.9	132.5	117.1	92.1	84.1
MEAN	3.05	3.67	2.95	2.64	2.56	37.3	72.0	5.90	4.42	3.78	2.97	2.80
MAX	3.6	4.2	3.2	2.7	2.6	150	174	9.6	7.6	8.5	4.5	4.7
MIN	2.4	3.4	2.7	2.6	2.2	2.2	12	2.9	2.5	2.4	2.4	1.8
AC-FT	188	218	181	162	147	2290	4280	363	263	232	183	167

CAL YR 1979 TOTAL 33450.3 MEAN 91.6 MAX 3020 MIN 2.2 AC-FT 66350
WTR YR 1980 TOTAL 4375.8 MEAN 12.0 MAX 174 MIN 1.8 AC-FT 8680

05059700 MAPLE RIVER NEAR ENDERLIN, ND—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
25...	1720	3.0	1200	7.7	6.5	720	370	180	66
NOV									
26...	1530	3.6	1010	7.4	3.0	730	420	150	86
DEC									
19...	1150	2.8	1650	7.1	2.5	780	410	130	110
FEB									
07...	1220	2.5	1560	7.4	2.0	740	370	190	65
MAR									
19...	1550	153	390	8.0	1.0	120	32	30	11
21...	1110	50	455	--	.5	--	--	--	--
26...	1225	87	571	--	.5	--	--	--	--
APR									
02...	0850	123	558	7.7	.5	210	89	50	21
MAY									
†01...	1035	9.5	1140	7.7	16.0	480	200	120	44
01...	1036	9.5	1140	7.7	16.0	470	210	120	42
JUN									
05...	1450	4.9	1440	7.7	17.0	680	340	170	62
JUL									
02...	0855	5.0	1650	7.6	19.0	610	320	140	63
31...	1345	3.8	1520	7.6	21.0	630	350	150	62
AUG									
†27...	1440	2.5	1480	7.6	18.0	720	400	190	60
27...	1441	2.5	1480	7.6	18.0	680	300	170	61

† - Analyses done by North Dakota State Water Commission Laboratory.

05059700 MAPLE RIVER NEAR ENDERLIN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT									
25...	74	18	1.2	8.0	423	0	347	14	480
NOV									
26...	110	24	1.8	10	374	0	307	24	550
DEC									
19...	99	21	1.5	9.7	449	0	368	57	530
FEB									
07...	75	18	1.2	8.3	454	0	372	29	480
MAR									
19...	23	27	.9	9.4	107	0	88	1.7	71
21...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
APR									
02...	32	24	1.0	8.9	149	0	122	4.8	140
MAY									
01...	72	24	1.4	12	343	0	281	11	300
01...	69	23	1.4	17	--	--	260	--	310
JUN									
05...	80	20	1.3	8.1	413	0	339	13	440
JUL									
02...	140	33	2.5	14	352	0	289	14	510
31...	77	21	1.3	7.0	340	0	279	14	470
AUG									
27...	75	18	1.2	8.0	396	0	325	16	460
27...	76	19	1.3	11	--	--	380	--	450

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
25...	46	.2	27	1090	1.59	9.48	0	80	640
NOV									
26...	78	.2	24	1190	1.81	12.9	190	50	1000
DEC									
19...	62	.2	29	1190	1.73	9.60	420	120	1400
FEB									
07...	46	.2	27	1120	1.60	7.96	320	200	1600
MAR									
19...	15	.1	5.6	220	.37	113	160	160	230
21...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
APR									
02...	21	.1	12	361	.50	121	60	90	220
MAY									
01...	45	.2	21	785	1.08	20.3	160	60	770
01...	42	.2	23	781	1.13	21.4	220	50	720
JUN									
05...	49	.2	24	1040	1.46	14.2	130	30	1200
JUL									
02...	93	.3	17	1150	1.66	16.5	0	20	730
31...	47	.2	20	1000	1.46	11.0	240	50	860
AUG									
27...	42	.2	26	1060	1.40	6.95	60	40	1200
27...	41	.2	26	1070	1.51	7.49	260	20	1200

05060500 RUSH RIVER AT AMENIA, ND

LOCATION.--Lat 47°01'00", long 97°12'50", in sec.24, T.141 N., R.52 W., Cass County, Hydrologic Unit 09020204, on left bank on downstream side of bridge on State Highway 18, and 0.6 mi (1.0 km) north of Amenia.

DRAINAGE AREA.--116 mi² (300 km²).

PERIOD OF RECORD.--July 1946 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is about 943 ft (287 m), from topographic map. See WSP 1913 for history of changes prior to June 10, 1961.

REMARKS.--Records good.

AVERAGE DISCHARGE.--34 years, 9.31 ft³/s (0.264 m³/s), 6,750 acre-ft/yr (8.32 hm³/yr); median of yearly mean discharges, 5.6 ft³/s (0.16 m³/s), 4,100 acre-ft/yr (5.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,490 ft³/s (98.8 m³/s) Apr. 19, 1979, gage height, 10.37 ft (3.161 m); maximum gage height, 12.15 ft (3.703 m) Mar. 23, 1966, backwater from ice; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 63 ft³/s (1.78 m³/s) Apr. 1, maximum gage height, 9.94 ft (3.300 m) Mar. 24, backwater from ice, only peak above base of 27 ft³/s (0.76 m³/s); no flow at times during the year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.58	.00	.00	.00	63	2.3	.00	.00	.00	5.2
2	.00	.00	.55	.00	.00	.00	61	2.2	.00	.00	.00	3.2
3	.00	.00	.50	.00	.00	.00	50	1.7	.00	.00	.00	3.2
4	.00	.00	.50	.00	.00	.00	46	1.4	.00	.00	.00	1.9
5	.00	.00	.45	.00	.00	.00	35	1.2	.00	.00	.00	1.2
6	.00	.00	.45	.00	.00	.00	30	1.2	.00	.00	.00	.69
7	.00	.00	.40	.00	.00	.00	25	1.2	.00	.00	.00	.15
8	.00	.00	.40	.00	.00	.00	22	.69	.00	.00	.00	.08
9	.00	.00	.35	.00	.00	.00	19	.48	.00	.00	.00	.03
10	.00	.00	.30	.00	.00	.00	15	1.3	1.3	.00	.00	.00
11	.00	.00	.25	.00	.00	.00	13	4.2	2.7	.00	.00	.00
12	.00	.00	.20	.00	.00	.00	11	3.0	1.9	.00	.00	.02
13	.00	.00	.20	.00	.00	.00	8.6	1.7	.93	.00	.00	.09
14	.00	.00	.15	.00	.00	.00	7.4	1.4	.69	.00	.00	.09
15	.00	.20	.10	.00	.00	.00	6.6	1.0	.24	.00	.00	.09
16	.00	.17	.08	.00	.00	.00	5.6	.69	.17	.00	.00	.07
17	.00	.17	.05	.00	.00	.00	5.2	.34	.29	.00	.00	.05
18	.00	.17	.02	.00	.00	.00	5.0	.24	.17	.00	.00	.02
19	.00	.17	.01	.00	.00	.00	4.8	.17	.17	.00	.00	.00
20	.00	.17	.00	.00	.00	.00	4.4	.15	.17	.00	.00	.00
21	.00	.15	.00	.00	.00	.00	4.6	.11	.12	.00	.00	.00
22	.00	.12	.00	.00	.00	.00	4.8	.08	.08	.00	.00	.00
23	.02	.12	.00	.00	.00	.00	4.8	.11	.03	.00	.00	.00
24	.07	.13	.00	.00	.00	1.0	5.0	.07	.00	.00	.00	.00
25	.00	.15	.00	.00	.00	10	4.8	.00	.00	.00	.00	.00
26	.00	.40	.00	.00	.00	45	4.2	.00	.00	.00	.00	.00
27	.00	.48	.00	.00	.00	50	4.0	.00	.00	.00	.00	.00
28	.00	.50	.00	.00	.00	59	3.8	.01	.00	.00	.00	.00
29	.00	.58	.00	.00	.00	55	3.2	.06	.00	.00	1.7	.00
30	.00	.60	.00	.00	---	61	2.7	.00	.00	.00	2.5	.00
31	.00	---	.00	.00	---	62	---	.00	---	.00	11	---
TOTAL	.09	4.28	5.54	.00	.00	343.00	479.5	27.00	8.96	.00	15.20	16.08
MEAN	.003	.14	.18	.000	.000	11.1	16.0	.87	.30	.000	.49	.54
MAX	.07	.60	.58	.00	.00	62	63	4.2	2.7	.00	11	5.2
MIN	.00	.00	.00	.00	.00	.00	2.7	.00	.00	.00	.00	.00
AC-FT	.2	8.5	11	.00	.00	680	951	54	18	.00	30	32

CAL YR 1979 TOTAL 12392.06 MEAN 34.0 MAX 3160 MIN .00 AC-FT 24580
WTR YR 1980 TOTAL 899.65 MEAN 2.46 MAX 63 MIN .00 AC-FT 1780

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN

LOCATION.--Lat 47°21'10", long 96°50'50", on line between secs.24 and 25, T.145 N., R.49 W., Traill County, Hydrologic Unit 09020107, on left bank on upstream side of highway bridge, 0.5 mi (0.8 km) west of Halstad, 2.5 mi (4.0 km) downstream from Wild Rice River, and at mile 375.2 (603.7 km).

DRAINAGE AREA.--21,800 mi² (56,500 km²), approximately, including 3,800 mi² (9,840 km²) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1936 to June 1937 (no winter records), April 1942 to September 1960 (spring and summer months only), May 1961 to current year.

REVISED RECORDS.--WSP 1388: 1936, 1950. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 826.65 ft (251.963 m) National Geodetic Vertical Datum of 1929. Prior to July 17, 1961, nonrecording gage at same site and datum.

REMARKS.--Records good. Some regulation by many controlled lakes and reservoirs on tributaries.

AVERAGE DISCHARGE.--19 years (1961-80), 1,830 ft³/s (51.83 m³/s), 1,326,000 acre-ft/yr (1.63 km³/yr); median of yearly mean discharges, 1,760 ft³/s (49.8 m³/s), 1,275,000 acre-ft/yr (1.6 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,000 ft³/s (1,190 m³/s) Apr. 22, 1979, gage height, 39.00 ft (11.887 m); minimum observed, 5.4 ft³/s (0.15 m³/s) Oct. 8, 9, 12-14, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1897 reached a stage of about 38.5 ft (11.73 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,900 ft³/s (365 m³/s) Apr. 5, gage height, 21.98 ft (6.700 m); minimum daily, 173 ft³/s (4.90 m³/s) Sept. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	646	790	700	482	530	510	2830	1420	525	514	203	275
2	646	841	700	499	530	510	3600	1380	519	563	203	225
3	656	867	630	510	530	510	4700	1330	522	517	203	198
4	670	875	575	510	530	510	7310	1300	553	467	212	198
5	666	954	555	510	520	510	9000	1270	598	427	212	189
6	670	958	670	510	500	510	11100	1230	678	394	203	191
7	666	905	719	510	500	515	10100	1170	756	370	198	181
8	638	870	720	512	500	515	8880	1110	780	332	196	173
9	577	670	716	505	490	515	7460	1070	794	305	203	218
10	541	780	698	500	450	515	5680	1050	894	273	212	229
11	548	770	684	480	410	520	4350	1060	1050	261	252	202
12	577	790	568	450	410	525	3650	1070	1100	252	301	193
13	586	800	525	460	410	540	3380	1080	1080	248	321	194
14	586	800	492	480	405	545	3230	1100	1050	252	263	303
15	586	800	479	500	400	550	3020	1080	938	242	267	390
16	590	820	434	500	400	560	2740	1060	866	229	234	305
17	593	850	386	500	400	570	2490	1030	822	209	214	285
18	607	915	380	500	400	580	2300	1000	954	203	200	285
19	652	915	383	500	400	600	2140	986	1090	202	189	279
20	691	920	383	500	400	635	2000	958	1110	223	181	267
21	708	950	370	480	400	670	1900	898	1020	225	189	257
22	680	865	373	460	400	720	1840	832	878	212	211	254
23	666	745	396	486	415	775	1780	784	756	212	310	267
24	656	740	412	510	430	812	1700	752	675	220	273	283
25	646	750	415	510	440	823	1640	719	614	236	252	301
26	642	710	421	510	460	880	1600	675	575	246	250	336
27	624	685	440	510	480	1100	1550	627	547	240	240	343
28	621	690	453	510	495	1450	1520	607	519	233	218	329
29	638	695	456	515	510	1720	1490	595	522	227	225	321
30	691	690	456	520	---	2010	1450	572	505	220	220	318
31	733	---	466	530	---	2290	---	553	---	214	246	---
TOTAL	19697	24410	16055	15459	13145	23995	116430	30368	23290	8970	7121	7789
MEAN	635	814	518	499	453	774	3881	980	776	289	230	260
MAX	733	958	720	530	530	2290	11100	1420	1110	563	321	390
MIN	541	670	370	450	400	510	1450	553	505	202	181	173
AC-FT	39070	48420	31850	30660	26070	47590	230900	60230	46200	17790	14120	15450

CAL YR 1979 TOTAL 1114410 MEAN 3053 MAX 41500 MIN 160 AC-FT 2210000
WTR YR 1980 TOTAL 306729 MEAN 838 MAX 11100 MIN 173 AC-FT 608400

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued
(National stream-quality accounting network station)
(Radiochemical station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961, 1964-67, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: February 1977 to current year.
WATER TEMPERATURES: February 1977 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,050 micromhos Oct. 4, 1978; minimum daily, 225 micromhos Apr. 5, 1978.
WATER TEMPERATURES: Maximum daily, 31.0°C July 13, 14, 1980; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 880 micromhos Sept. 15; minimum daily, 380 micromhos Apr. 5.
WATER TEMPERATURES: Maximum daily, 31.0°C July 13, 14; minimum observed, 0.5°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT										
02...	1300	645	478	8.5	14.0	22	9.8	92	K13	90
NOV										
06...	1300	959	700	8.5	2.5	7.3	13.2	100	K13	260
DEC										
06...	1655	689	734	8.2	.0	5.1	9.9	69	38	67
JAN										
08...	1400	511	665	8.2	.0	--	10.2	71	K2	K4
FEB										
06...	1225	499	678	7.8	.5	1.8	9.4	65	K2	K1
MAR										
04...	1240	510	693	7.9	.0	3.5	10.0	71	K12	35
28...	1030	1450	658	7.9	.0	33	9.6	68	K21	14000
APR										
15...	1145	3010	594	8.2	7.5	80	10.4	90	K17	220
MAY										
12...	2000	1040	646	8.7	14.5	33	11.7	119	K7	35
JUN										
16...	1500	860	638	8.2	22.0	99	6.2	72	77	72
JUL										
14...	1310	243	764	8.3	26.5	22	6.6	86	K21	38
AUG										
11...	1250	264	602	8.6	22.5	54	8.6	102	130	240
SEP										
08...	1340	168	830	8.6	24.5	37	10.2	125	K33	170

DATE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)
OCT										
02...	240	26	45	30	16	13	.5	21	5.2	210
NOV										
06...	280	42	65	29	31	20	.8	38	6.8	240
DEC										
06...	330	69	69	38	36	30	.9	43	7.2	260
JAN										
08...	350	41	73	41	25	13	.6	28	4.8	310
FEB										
06...	330	60	66	40	22	12	.5	28	5.9	270
MAR										
04...	300	36	59	36	22	14	.6	27	5.4	260
28...	270	56	57	30	34	21	.9	41	7.0	210
APR										
15...	260	79	59	27	23	16	.6	31	8.4	180
MAY										
12...	290	61	62	33	28	17	.7	35	6.5	230
JUN										
16...	280	68	60	31	28	18	.7	35	7.4	210
JUL										
14...	310	83	66	36	42	22	1.0	52	10	230
AUG										
11...	250	36	49	30	31	21	.9	42	11	210
SEP										
08...	310	87	62	37	59	29	1.5	69	10	220

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
OCT 02...	47	8.7	.2	14	293	293	.40	510	.16	.12
NOV 06...	108	15	.2	12	437	404	.59	1130	.11	.11
DEC 06...	110	17	.3	16	466	451	.63	867	.21	.16
JAN 08...	110	14	.3	16	477	472	.65	658	.25	.26
FEB 06...	98	16	.1	18	410	422	.56	552	.43	.43
MAR 04...	78	13	.2	17	404	389	.55	556	.41	.41
28...	110	26	.2	15	409	409	.56	1680	.72	.71
APR 15...	120	11	.2	16	397	376	.54	3230	.65	.66
MAY 12...	110	12	.1	9.7	399	400	.54	1120	.21	.13
JUN 16...	110	13	.2	14	412	392	.56	957	.58	.52
JUL 14...	140	27	.5	18	497	488	.68	326	.55	.56
AUG 11...	80	24	.4	12	373	364	.51	266	.24	.25
SEP 08...	150	41	.6	16	555	513	.75	252	1.0	1.2

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00602)
OCT 02...	.03	.04	.05	.97	.76	1.0	.20	.80	1.2	.92
NOV 06...	.08	.09	.12	.92	.91	1.0	.00	1.0	1.1	1.1
DEC 06...	1.2	1.2	1.5	1.7	1.3	2.9	.40	2.5	3.1	2.7
JAN 08...	.22	.25	.32	1.4	1.5	1.6	.00	1.7	1.9	2.0
FEB 06...	.46	.46	.59	.84	.74	1.3	.10	1.2	1.7	1.6
MAR 04...	.27	.27	.35	1.6	.73	1.9	.90	1.0	2.3	1.4
28...	.46	.42	.54	1.0	.98	1.5	.10	1.4	2.2	2.1
APR 15...	.34	.29	.37	1.8	.81	2.1	1.0	1.1	2.8	1.8
MAY 12...	.41	.39	.50	.89	.71	1.3	.20	1.1	1.5	1.2
JUN 16...	.04	.07	.09	1.2	.84	1.2	.29	.91	1.4	1.4
JUL 14...	.01	.00	.00	1.2	1.0	1.2	.20	1.0	1.8	1.6
AUG 11...	.20	.12	.15	3.0	1.4	3.3	1.8	1.5	3.5	1.8
SEP 08...	.00	.00	.00	1.5	1.1	1.5	.40	1.1	2.5	2.3

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)	BARIUM, DISSOLVED (UG/L AS BA) (01005)
OCT 02...	5.1	.130	.40	.090	--	--	--	--	--	--
NOV 06...	4.9	.198	.61	.160	--	--	--	--	--	--
DEC 06...	14	.590	1.8	.570	3	0	3	400	300	90
JAN 08...	8.2	.110	.34	.080	--	--	--	--	--	--
FEB 06...	7.7	.140	.43	.140	--	--	--	--	--	--
MAR 04...	10	.120	.37	.100	2	1	1	0	0	100
28...	9.8	.280	.86	.190	--	--	--	--	--	--
APR 15...	12	.340	1.0	.140	--	--	--	--	--	--
MAY 12...	6.7	.440	1.4	.310	5	0	5	100	0	100
JUN 16...	7.9	.340	1.0	.200	7	1	6	100	10	90
JUL 14...	7.7	.240	.74	.190	--	--	--	--	--	--
AUG 11...	16	.210	.64	.120	8	1	7	0	0	80
SEP 08...	11	.950	2.9	.870	--	--	--	--	--	--

DATE	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)
OCT 02...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 06...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 06...	0	0	<1	0	0	0	2	0	<3	8	0	8
JAN 08...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 04...	1	0	<1	0	0	0	0	0	<3	14	13	1
28...	--	--	--	--	--	--	--	--	--	--	--	--
APR 15...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 12...	0	0	<1	0	0	0	0	0	<3	10	5	5
JUN 16...	0	0	<1	0	0	0	2	<2	<3	19	13	6
JUL 14...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 11...	1	0	1	10	10	0	2	<2	<3	24	11	13
SEP 08...	--	--	--	--	--	--	--	--	--	--	--	--

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)
OCT												
02...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
06...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
06...	300	280	20	9	9	0	70	30	40	1.5	.0	1.8
JAN												
08...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
06...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
04...	240	230	<10	5	5	0	70	10	60	.1	.1	.0
28...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
15...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
12...	1200	1200	<10	11	11	0	170	170	4	.2	.1	.1
JUN												
16...	3100	3100	<10	10	10	0	320	320	5	1.8	.8	1.0
JUL												
14...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
11...	1800	1800	<10	23	22	1	160	150	6	.4	.3	.1
SEP												
08...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT												
02...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
06...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
06...	7	5	2	0	0	0	0	0	0	10	0	10
JAN												
08...	--	--	--	--	--	--	0	--	--	--	--	--
FEB												
06...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
04...	0	0	0	0	0	0	0	0	0	40	10	30
28...	--	--	--	--	--	--	0	--	--	--	--	--
APR												
15...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
12...	16	12	4	0	0	0	0	0	0	30	30	<3
JUN												
16...	15	12	3	1	1	0	4	4	0	20	20	<3
JUL												
14...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
11...	17	1	16	1	0	1	1	1	0	110	100	7
SEP												
08...	--	--	--	--	--	--	0	--	--	--	--	--

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)
OCT 02...	--	--	--	--	--	--	--	--	15	14	.6
NOV 06...	--	--	--	--	--	--	--	--	22	--	--
DEC 06...	--	--	--	--	--	--	--	--	13	12	1.4
JAN 08...	--	--	--	--	--	--	--	--	16	--	--
FEB 06...	--	--	--	--	--	--	--	--	7.8	--	--
MAR 04...	--	--	--	--	--	--	--	--	14	13	.5
28...	--	--	--	--	--	--	--	--	14	--	--
APR 15...	11	5.4	9.3	4.7	9.2	4.7	.11	4.7	14	--	--
MAY 12...	--	--	--	--	--	--	--	--	--	13	2.1
JUN 16...	--	--	--	--	--	--	--	--	--	13	1.1
JUL 14...	--	--	--	--	--	--	--	--	21	--	--
AUG 11...	<6.3	3.0	11	2.7	11	2.6	.11	2.7	--	18	--
SEP 08...	--	--	--	--	--	--	--	--	21	--	--

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 02...	--	3.07	2.83	2.74	.000	23	53	92	94
NOV 06...	47000	--	--	--	--	--	26	67	98
DEC 06...	--	.160	.160	.480	.000	31	15	28	81
JAN 08...	--	--	--	--	--	--	12	17	58
FEB 06...	--	--	--	--	--	--	9	12	77
MAR 04...	120	.080	.080	.020	.000	27	12	17	82
28...	--	--	--	--	--	--	55	215	97
APR 15...	--	--	--	--	--	--	195	1590	99
MAY 12...	--	2.99	2.76	.080	.000	27	60	168	98
JUN 16...	--	--	--	--	--	--	180	418	99
JUL 14...	3600	--	--	--	--	--	47	31	96
AUG 11...	34000	7.56	5.35	9.38	2.74	29	88	63	100
SEP 08...	74000	--	--	--	--	--	52	24	100

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	570	650	540	650	700	625	450	600	610	660	700	760
2	550	660	603	640	750	650	410	630	630	650	680	750
3	530	640	582	650	700	640	430	620	600	675	670	740
4	500	650	624	625	675	650	400	600	650	690	650	750
5	530	660	645	650	625	620	380	620	640	675	660	725
6	540	650	666	---	678	620	400	600	630	680	675	760
7	530	660	728	---	650	610	400	600	645	620	670	800
8	490	670	707	620	660	650	420	620	675	640	660	850
9	500	640	728	640	650	660	460	610	680	660	590	850
10	520	620	728	650	670	710	490	620	670	650	620	820
11	480	620	707	630	---	700	500	620	650	630	640	800
12	500	640	697	625	620	670	530	630	600	650	600	850
13	540	640	686	650	600	750	560	620	590	670	620	855
14	600	660	666	620	600	810	600	620	580	710	580	855
15	600	660	676	640	620	700	610	600	600	700	560	880
16	580	640	676	640	600	800	595	580	630	700	550	720
17	560	600	697	680	620	725	600	600	620	680	550	650
18	600	625	683	670	600	700	605	610	610	730	560	700
19	580	640	704	660	560	750	620	600	600	700	540	750
20	580	650	735	680	550	730	610	590	580	720	510	745
21	600	650	693	670	580	650	640	600	600	750	500	750
22	590	630	735	660	780	680	610	590	630	740	580	725
23	580	600	683	680	590	700	600	600	650	750	600	750
24	580	610	672	660	640	650	580	580	640	700	630	800
25	600	620	693	650	620	600	560	600	620	725	650	760
26	590	600	693	650	630	580	600	620	630	720	700	740
27	610	600	742	630	650	500	610	610	650	740	680	700
28	620	610	689	620	660	520	620	600	655	730	710	720
29	600	600	657	650	640	550	600	600	675	700	700	730
30	600	600	678	620	---	550	610	600	660	720	750	750
31	620	---	689	640	---	540	---	580	---	740	755	---
MEAN	564	633	681	647	640	655	537	605	630	694	630	768

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	4.5	1.0	1.0	.5	.5	1.5	19.0	21.0	23.5	23.0	19.0
2	15.5	4.5	1.0	1.0	1.0	.5	2.0	19.0	20.0	24.5	23.0	20.0
3	14.0	4.5	1.0	1.0	1.0	.5	2.0	16.0	21.0	25.5	23.0	21.0
4	13.0	4.0	1.0	1.0	1.0	.5	2.0	20.0	21.5	22.5	23.0	21.0
5	13.0	3.5	1.0	1.0	.5	.5	2.0	19.0	21.0	26.0	21.0	23.0
6	13.0	3.5	1.0	---	.5	.5	3.0	17.0	21.5	25.0	21.0	25.0
7	12.0	2.5	1.0	---	.5	.5	3.5	14.0	18.0	24.0	23.5	25.0
8	11.0	1.5	1.0	1.0	.5	.5	4.0	16.0	18.0	25.0	24.5	23.5
9	11.0	1.5	1.0	1.0	.5	.5	6.0	16.0	21.5	27.0	22.0	23.0
10	10.0	1.0	1.0	1.0	.5	.5	6.0	15.0	22.0	28.0	21.0	22.0
11	10.0	.5	1.0	1.0	.5	.5	6.0	15.0	23.0	28.0	24.0	20.0
12	8.0	.5	1.0	1.0	.5	.5	7.0	14.0	24.0	30.0	23.0	17.5
13	9.0	.5	1.0	1.0	.5	.5	5.0	14.0	23.5	31.0	23.0	17.0
14	6.0	.5	1.0	1.0	.5	.5	7.0	14.5	24.0	31.0	23.0	17.0
15	9.5	1.0	1.0	1.0	.5	.5	9.0	16.0	21.0	30.0	24.0	16.0
16	8.5	1.0	1.0	1.0	.5	1.0	10.0	16.5	23.0	29.0	24.0	14.0
17	9.0	1.5	1.0	1.0	.5	1.0	11.5	17.0	22.5	29.0	24.0	13.5
18	8.0	2.0	1.0	1.0	.5	1.0	13.0	17.0	21.0	27.0	24.0	12.5
19	9.5	1.0	1.0	1.0	.5	1.0	14.0	18.0	23.0	26.0	26.0	12.5
20	8.0	1.0	1.0	1.0	.5	1.0	16.0	20.5	23.0	25.0	25.0	13.0
21	8.0	1.0	1.0	1.0	.5	1.0	17.0	21.5	23.0	24.0	24.0	13.0
22	7.5	1.5	1.0	1.0	.5	1.0	16.0	23.0	23.0	25.0	23.5	13.0
23	7.0	1.5	1.0	1.0	.5	1.0	16.0	23.0	26.0	26.5	24.0	13.0
24	7.0	1.5	1.0	1.0	.5	1.0	16.5	19.0	25.0	25.0	25.0	12.0
25	7.0	1.0	1.0	.5	.5	1.0	16.5	23.0	26.0	26.0	24.0	12.5
26	7.0	1.0	1.0	.5	.5	1.0	15.5	25.0	23.0	24.0	21.0	13.0
27	7.5	1.0	1.0	.5	.5	1.0	14.5	26.0	23.0	26.0	22.5	10.0
28	7.5	1.0	1.0	.5	.5	1.0	16.5	25.0	21.0	23.0	21.0	14.5
29	7.0	1.0	1.0	.5	.5	1.0	17.0	24.0	21.0	26.0	20.0	15.0
30	7.0	1.0	1.0	.5	---	1.0	18.0	23.0	23.0	26.0	19.5	16.0
31	5.5	---	1.0	.5	---	1.0	---	23.0	---	27.0	18.5	---
MEAN	9.5	1.5	1.0	1.0	.5	1.0	10.0	19.0	22.5	26.5	23.0	17.0

RED RIVER OF THE NORTH BASIN

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 6,79		MAR 4,80		JUL 14,80		AUG 11,80		SEP 8,80	
TIME	1300		1240		1310		1250		1340	
TOTAL CELLS/ML	47000		120		3600		34000		74000	
DIVERSITY: DIVISION	1.6		1.0		1.5		1.4		1.2	
.CLASS	1.6		1.0		1.5		1.4		1.3	
..ORDER	1.9		1.9		1.7		2.0		1.4	
...FAMILY	2.4		1.9		2.7		2.3		2.3	
....GENUS	2.6		2.3		3.5		3.6		3.2	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	*	0	--	-	--	-
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	650#	18	530	2	--	-
...HYDRODICTYACEAE										
....PEDIASTRUM	--	-	--	-	--	-	--	-	6200	8
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	--	-	*	0	--	-
....MICRACTINIUM	3100	7	--	-	--	-	*	0	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	1500	3	29#	25	97	3	*	0	460	1
....DICTYOSPHAERIUM	--	-	--	-	97	3	--	-	3700	5
....FRANCEIA	--	-	--	-	32	1	--	-	--	-
....GLOEOACTINIUM	--	-	--	-	--	-	--	-	25000#	34
....KIRCHNERIELLA	--	-	--	-	190	5	--	-	*	0
....OOCYSTIS	*	0	--	-	130	4	1400	4	920	1
....POLYEDRIOPSIS	--	-	--	-	--	-	*	0	--	-
....SELENASTRUM	510	1	--	-	--	-	*	0	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	1200	3	--	-	--	-	1600	5	--	-
....CRUCIGENIA	--	-	--	-	130	4	920	3	5300	7
....SCENEDESMUS	15000#	31	--	-	520	15	1700	5	4200	6
....TETRASTRUM	--	-	--	-	190	5	1600	5	3700	5
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	510	1	29#	25	65	2	790	2	1200	2
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	11000#	23	14	13	270	8	1300	4	4200	6
....MELOSIRA	340	1	--	-	180	5	260	1	460	1
....STEPHANODISCUS	--	-	29#	25	*	0	--	-	--	-
..PENNALES										
...FRAGILARIACEAE										
....ASTERIONELLA	--	-	14	13	--	-	--	-	--	-
....SYNEDRA	340	1	--	-	--	-	*	0	--	-
...NAVICULACEAE										
....NAVICULA	--	-	--	-	*	0	200	1	*	0
...NITZSCHIACEAE										
....NITZSCHIA	1000	2	--	-	180	5	1300	4	1600	2
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	*	0	--	-
.XANTHOPHYCEAE										
..HETEROCOCCALES										
...CENTRITRACTACEAE										
....CENTRITRACTUS	--	-	--	-	--	-	--	-	*	0
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	*	0	*	0
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	--	-	--	-	4200	13	3700	5
....ANACYSTIS	690	1	--	-	710#	20	9800#	29	12000#	16
....COCCOCHLORIS	--	-	--	-	--	-	2600	8	--	-
....GOMPHOSPHAERIA	--	-	--	-	--	-	530	2	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	1100	3	--	-
....APHANIZOMENON	--	-	--	-	--	-	2800	8	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	11000#	24	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	NOV 6,79 1300		MAR 4,80 1240		JUL 14,80 1310		AUG 11,80 1250		SEP 8,80 1340	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	--	-	200	1	460	1
....TRACHELOMONAS	510	1	--	-	65	2	*	0	*	0
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05064900 BEAVER CREEK NEAR FINLEY, ND
(Hydrologic bench-mark station)

LOCATION.--Lat 47°35'40", long 97°42'18", in NE¼ sec.31, T.148 N., R.55 W., Steele County, Hydrologic Unit 09020109, on right bank 500 ft (150 m) upstream from bridge on county highway, and 7 mi (11 km) northeast of Finley.

DRAINAGE AREA.--160 mi² (410 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and concrete broad-crested weir. Datum of gage is 1,170.08 ft (356.640 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--16 years, 9.72 ft³/s (0.275 m³/s), 7,040 acre-ft/yr (8.68 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,900 ft³/s (53.8 m³/s) Apr. 19, 1979, gage height, 8.35 ft (2.545 m), backwater from ice; maximum gage height, 9.70 ft (2.957 m) Mar. 14, 1966, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge recorded, 100 ft³/s (2.83 m³/s) Mar. 31, gage height, 3.72 ft (1.134 m), only peak above base of 50 ft³/s (1.42 m³/s) but may have been more peaks during period of missing gage height record, Mar. 28-30; maximum gage height observed, 3.82 ft (1.164 m) Mar. 27, backwater from ice; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	68	.82	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	45	.75	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	29	.74	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	25	.64	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	17	.59	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	12	.55	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	10	.51	.01	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	6.9	.55	.01	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	5.3	.55	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	4.3	.55	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	3.5	.51	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	3.0	.43	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	2.3	.43	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	2.2	.43	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	2.1	.35	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	1.8	.27	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	1.8	.27	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	2.0	.21	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	2.0	.18	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	2.2	.15	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	2.3	.03	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	2.1	.01	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	1.8	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	1.6	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	9.5	1.2	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	30	1.0	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	50	.96	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	70	.89	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	75	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	234.50	259.95	9.52	.02	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	7.56	8.67	.31	.001	.000	.000	.000
MAX	.00	.00	.00	.00	.00	75	68	.82	.01	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.89	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	465	516	19	.04	.00	.00	.00

CAL YR 1979 TOTAL 8882.53 MEAN 24.3 MAX 1540 MIN .00 AC-FT 17620
WTR YR 1980 TOTAL 503.99 MEAN 1.38 MAX 75 MIN .00 AC-FT 1000

05064900 BEAVER CREEK NEAR FINLEY, ND--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
MAR 30...	1245	72	388	7.7	1.0	11.8	84	>8000	220	6600	150
MAY 02...	1135	.72	1240	8.1	18.0	9.0	96	K41000	2000	240	530

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
MAR 30...	59	36	14	20	21	.8	31	11	89	100
MAY 02...	260	129	51	77	23	1.6	90	13	270	370

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
MAR 30...	7.8	.1	11	270	253	.37	52.5	1.2	1.2	.610
MAY 02...	27	.2	16	886	845	1.20	1.72	.01	.00	.060

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)
MAR 30...	1.9	.47	1.4	4	2	2	200	0	200	<1
MAY 02...	.18	.02	.06	4	0	4	400	300	140	<1

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05064900 BEAVER CREEK NEAR FINLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)
MAR 30...	1	0	1	20	20	0	<3	7	0	<10	1500	1300
MAY 02...	0	0	<1	0	0	0	<3	3	<3	<10	300	270

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)
MAR 30...	190	2	2	0	22	350	100	250	.2	.2	.0
MAY 02...	28	1	1	0	75	300	150	150	.2	.2	.0

DATE	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)
MAR 30...	14	1	1	0	0	0	0	130	<6.0	40	0
MAY 02...	<10	1	0	1	0	0	0	580	<6.0	20	10

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CYANIDE TOTAL (MG/L AS CN) (00720)	PCB, TOTAL (UG/L) (39516)
MAR 30...	47	--	--	--	--	--	--	--	--	.01	--
MAY 02...	9	<14	<.4	20	.5	20	.6	.06	4.7	.00	.0

05064900 BEAVER CREEK NEAR FINLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)
MAR 30...	--	--	--	--	--	--	--	--	--	--	--
MAY 02...	0	.00	.0	.0	0	.00	.1	.00	.1	.00	.0

DATE	DIAZINON, TOTAL (UG/L) (39570)	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)
MAR 30...	--	--	--	--	--	--	--	--	--	--	--
MAY 02...	.00	.00	.0	.00	.0	.00	.00	.0	.00	.0	.01

DATE	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL TRITHION, TOTAL (UG/L) (39790)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)	PARATHION, TOTAL (UG/L) (39540)
MAR 30...	--	--	--	--	--	--	--	--	--
MAY 02...	.0	.00	.00	.0	.00	.00	.00	.00	.00

DATE	PERTHANE TOTAL (UG/L) (39034)	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
MAR 30...	--	--	--	--	--	--	--	57	11
MAY 02...	.00	0	0	.00	.02	.00	.00	10	.02

05066500 GOOSE RIVER AT HILLSBORO, ND

LOCATION.--Lat 47°24'20", long 97°03'40", in NW¼ sec.5, T.145 N., R.50 W., Traill County, Hydrologic Unit 09020109, on right bank 600 ft (180 m) upstream from Foogman Dam in Hillsboro, and 27.5 mi (44 km) upstream from mouth.

DRAINAGE AREA.--1,203 mi² (3,116 km²), of which 110 mi² (285 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1931 to current year (no winter records 1932-34). Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and masonry dam. Datum of gage is 879.52 ft (268.078 m) National Geodetic Vertical Datum of 1929. Sept. 26, 1941, to Oct. 27, 1965, at site 600 ft (180 m) downstream at same datum. See WSP 1728 or 1913 for history of changes prior to Sept. 26, 1941.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--47 years (1931-32, 1934-80), 69.0 ft³/s (1.954 m³/s), 49,990 acre-ft/yr (61.6 hm³/yr); median of yearly mean discharges, 40 ft³/s (1.13 m³/s), 29,000 acre-ft/yr (36 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft³/s (419 m³/s) Apr. 21, 1979, gage height, 16.76 ft (5.108 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 790 ft³/s (22.4 m³/s) Mar. 31, gage height, 3.55 ft (1.082 m), only peak above base of 200 ft³/s (5.66 m³/s); minimum daily, 0.18 ft³/s (0.005 m³/s) July 24 - Aug. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	8.0	9.4	5.6	4.7	5.6	760	22	2.4	.62	.18	3.1
2	1.9	9.4	9.4	5.6	4.7	5.6	768	22	2.4	.62	.18	6.8
3	1.9	11	9.4	5.6	4.7	5.6	782	22	2.4	.62	.18	12
4	1.9	9.8	9.4	5.6	4.7	5.6	715	22	3.1	.62	.18	12
5	1.9	8.0	9.4	5.6	4.7	5.6	548	15	3.8	.62	.18	9.4
6	1.9	8.0	9.4	5.6	4.7	5.6	431	15	3.8	.62	.18	5.6
7	2.4	7.0	9.4	5.6	4.7	5.6	384	14	4.8	.62	.18	4.7
8	1.9	6.8	9.4	5.6	4.7	5.6	311	14	5.6	.62	.18	3.4
9	1.4	6.7	9.4	5.6	4.7	5.6	241	12	5.6	.54	.18	1.4
10	1.4	5.6	9.4	5.6	4.7	5.6	204	12	5.6	.38	.18	.94
11	1.9	5.6	9.4	5.6	4.7	5.6	178	11	5.6	.39	.18	.62
12	2.4	5.6	9.4	4.7	4.7	5.6	153	11	4.4	.38	.18	.38
13	2.4	5.6	9.4	4.7	4.7	5.6	128	9.4	3.5	.38	.38	.38
14	2.4	5.6	9.4	4.7	4.7	5.6	105	9.4	3.8	.38	.62	.38
15	2.4	5.6	9.4	4.7	4.7	5.6	95	9.4	3.8	.38	.62	.38
16	3.8	5.6	9.4	4.7	4.7	5.6	77	9.4	3.2	.38	.62	.38
17	4.7	5.6	9.4	4.7	4.7	5.6	72	9.4	2.0	.38	.62	.38
18	5.6	5.6	9.4	4.7	4.7	5.6	63	9.4	1.4	.62	.94	.38
19	6.8	5.6	9.4	4.7	4.7	5.6	52	9.4	1.4	.94	.94	.38
20	8.0	5.6	9.4	4.7	4.7	5.6	52	8.0	1.4	.38	1.4	.38
21	8.0	5.6	9.4	4.7	4.7	5.6	50	6.8	1.4	.62	1.9	.38
22	8.0	5.6	8.0	4.7	4.7	5.6	42	5.6	1.4	.62	2.4	.62
23	5.6	5.6	8.0	4.7	4.7	6.8	37	3.8	1.4	.38	3.8	.38
24	5.6	5.6	8.0	4.7	4.7	11	37	3.1	.94	.18	3.1	.38
25	5.6	5.6	6.8	4.7	4.7	20	35	3.1	.94	.18	3.1	.38
26	5.6	5.6	5.6	4.7	4.7	29	33	2.4	.94	.18	3.1	.38
27	6.8	5.6	5.6	4.7	4.7	37	30	2.4	.62	.18	3.1	.38
28	6.8	8.0	5.6	4.7	4.7	111	28	2.4	.62	.18	2.4	.38
29	6.8	9.4	5.6	4.7	5.6	241	26	2.4	.62	.18	6.8	.38
30	6.8	9.4	5.6	4.7	---	396	24	2.4	.62	.18	4.7	.38
31	9.4	---	5.6	4.7	---	738	---	2.4	---	.18	3.1	---
TOTAL	133.9	202.3	261.8	155.6	137.2	1713.0	6461	302.6	79.50	13.55	45.80	67.42
MEAN	4.32	6.74	8.45	5.02	4.73	55.3	215	9.76	2.65	.44	1.48	2.25
MAX	9.4	11	9.4	5.6	5.6	738	782	22	5.6	.94	6.8	12
MIN	1.4	5.6	5.6	4.7	4.7	5.6	24	2.4	.62	.18	.18	.38
AC-FT	266	401	519	309	272	3400	12820	600	158	27	91	134

CAL YR 1979 TOTAL 104296.00 MEAN 286 MAX 14800 MIN 1.4 AC-FT 206900
WTR YR 1980 TOTAL 9573.67 MEAN 26.2 MAX 782 MIN .18 AC-FT 18990

05082500 RED RIVER OF THE NORTH AT GRAND FORKS, ND

LOCATION.--Lat 47°56'34", long 97°03'10", in SW¼NE¼ sec.33, T.152 N., R.50 W., Grand Forks County, Hydrologic Unit 09020301, on left bank on second floor of old sewage plant in Grand Forks, 2.3 mi (3.7 km) downstream from Red Lake River, and at mile 295.7 (475.8 km).

DRAINAGE AREA.--30,100 mi² (78,000 km²), approximately, including 3,800 mi² (9,840 km²) in closed basins.

PERIOD OF RECORD.--April 1882 to current year. Monthly discharge only prior to May 1901, published in WSP 1308.

REVISED RECORDS.--WSP 855: 1936(M). WSP 1115: 1942. WSP 1175: 1897(M). WSP 1388: 1904, 1914-15, 1917-19, 1921-22, 1927, 1950. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 778.35 ft (237.241 m) National Geodetic Vertical Datum of 1929. Nov. 3, 1933, to Apr. 13, 1965, water-stage recorder 0.3 mi (0.5 km) upstream at present datum. See WSP 1728 or 1913 for history of changes prior to Nov. 3, 1933.

REMARKS.--Records good.

AVERAGE DISCHARGE.--98 years, 2,551 ft³/s (72.24 m³/s), 1,848,000 acre-ft/yr (2.28 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 85,000 ft³/s (2,410 m³/s) Apr. 10, 1897, gage height, 50.2 ft (15.30 m), site and datum then in use, from rating curve extended above 54,000 ft³/s (1,530 m³/s); minimum, 1.8 ft³/s (0.051 m³/s) Sept. 2, 1977, caused by unusual regulation during repair of dam at Grand Forks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,000 ft³/s (623 m³/s) Apr. 6, gage height, 31.01 ft (9.452 m); minimum daily, 312 ft³/s (8.84 m³/s) Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1640	1980	1250	1360	1350	1440	7230	2500	1290	1090	425	2910
2	1620	2100	1300	1360	1350	1440	9000	2450	1260	1060	396	3120
3	1590	2140	1300	1360	1370	1450	11100	2390	1230	1020	389	2060
4	1600	2230	1300	1360	1400	1460	14000	2350	1240	1050	374	1400
5	1600	2330	1320	1350	1420	1470	19600	2290	1240	1020	356	964
6	1610	2400	1600	1350	1420	1480	21800	2210	1280	972	365	775
7	1610	2400	1800	1350	1420	1480	21300	2190	1370	932	356	667
8	1650	2280	2000	1340	1410	1490	20300	2110	1440	892	348	495
9	1700	1900	2000	1340	1410	1500	18800	2040	1490	828	345	312
10	1660	1500	2000	1340	1410	1500	16600	2010	1490	786	341	396
11	1620	1350	2030	1330	1400	1510	12700	1980	1510	764	345	432
12	1600	1600	2030	1330	1400	1520	9880	1900	1610	688	330	450
13	1600	1650	1880	1330	1400	1530	8020	1880	1720	640	363	452
14	1610	1700	1680	1330	1400	1540	7000	1870	1760	600	425	432
15	1610	1800	1600	1330	1400	1540	6400	1860	1780	550	495	420
16	1620	2040	1510	1330	1400	1550	6000	1860	1750	500	535	458
17	1620	2200	1500	1340	1400	1560	5550	1850	1650	480	520	526
18	1630	2290	1400	1350	1400	1560	5050	1830	1560	460	512	526
19	1620	2590	1360	1350	1400	1570	4700	1780	1580	440	465	520
20	1660	2260	1360	1340	1400	1580	4380	1730	1660	490	445	520
21	1700	2030	1360	1340	1400	1590	4180	1690	1740	495	485	506
22	1730	1850	1360	1330	1410	1600	4000	1640	1720	508	445	495
23	1730	1740	1360	1310	1410	1600	3820	1590	1610	515	470	490
24	1710	1620	1360	1300	1420	1610	3400	1520	1460	490	492	488
25	1700	1400	1360	1320	1420	1700	3040	1480	1340	488	508	495
26	1680	1190	1360	1340	1420	1800	2810	1470	1220	490	515	512
27	1700	1100	1360	1350	1420	1900	2700	1440	1170	518	508	526
28	1670	1000	1360	1350	1430	2230	2660	1390	1130	529	495	553
29	1640	1100	1360	1370	1430	3000	2610	1360	1140	495	520	562
30	1680	1200	1360	1350	---	4400	2580	1330	1100	495	580	559
31	1790	---	1360	1350	---	5830	---	1310	---	465	992	---
TOTAL	51200	54970	47180	41580	40720	57430	261210	57300	43540	20750	14140	23021
MEAN	1652	1832	1522	1341	1404	1853	8707	1848	1451	669	456	767
MAX	1790	2590	2030	1370	1430	5830	21800	2500	1780	1090	992	3120
MIN	1590	1000	1250	1300	1350	1440	2580	1310	1100	440	330	312
AC-FT	101600	109000	93580	82470	80770	113900	518100	113700	86360	41160	28050	45660

CAL YR 1979 TOTAL 2254504 MEAN 6177 MAX 80900 MIN 650 AC-FT 4472000
WTR YR 1980 TOTAL 713041 MEAN 1948 MAX 21800 MIN 312 AC-FT 1414000

05083000 TURTLE RIVER AT MANVEL, ND

LOCATION.--Lat 48°04'43", long 97°11'03", in SE¼ sec.10, T.153 N., R.51 W., Grand Forks County, Hydrologic Unit 09020307, on left bank 10 ft (3.1 m) downstream from bridge on State Highway No. 33, 0.3 mi (0.48 km) west of Manvel, and 10 mi (16 km) upstream from mouth.

DRAINAGE AREA.--613 mi² (1,590 km²), of which 57 mi² (148 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1945 to September 1970 (discharge), December 1979 to September 1980 (gage heights and annual maximum discharge only).

REVISED RECORDS.--WSP 1438: 1947(M), 1948. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 799.28 ft (243.621 m) National Geodetic Vertical Datum of 1929. Prior to June 29, 1959, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--25 years (water years 1946-70), 50.3 ft³/s (1.424 m³/s), 36,440 acre-ft/yr (44.9 hm³/yr); median of yearly mean discharges 32 ft³/s (0.91 m³/s), 23,200 acre-ft/yr (29 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft³/s (793 m³/s) Apr. 19, 1950, from rating curve extended above 4,300 ft³/s (122 m³/s) on basis of contracted-opening measurement of peak flow, gage height, 21.5 ft (6.55 m) from floodmark; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 500 ft³/s (14.2 m³/s) Apr. 3, gage height, 13.08 ft (3.987 m), backwater from ice; minimum not determined.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	6.70	6.59	6.44	6.50	11.93	5.74	5.82	4.78	5.08	5.49
2		---	6.69	6.58	6.42	6.50	12.61	5.75	5.75	4.73	5.17	5.43
3		---	6.66	6.55	6.40	6.50	12.98	5.61	5.71	4.65	5.26	5.39
4		---	6.65	6.54	6.39	6.50	12.45	5.66	5.71	4.57	5.31	5.39
5		---	6.65	6.54	6.41	6.50	10.62	5.61	5.73	4.49	5.19	5.34
6		---	6.68	6.56	6.41	6.50	8.67	5.62	5.75	4.44	5.01	5.26
7		---	6.72	6.50	6.45	6.50	7.79	5.63	5.74	4.42	5.02	5.19
8		---	6.72	6.42	6.47	6.51	7.34	5.66	5.72	4.41	5.02	5.20
9		---	6.67	6.42	6.46	6.51	6.94	5.70	5.72	4.42	4.93	5.21
10		---	6.64	6.43	6.45	6.51	6.64	5.76	5.76	4.42	4.81	5.19
11		---	6.62	6.43	6.45	6.51	6.54	5.84	5.78	4.39	4.71	5.14
12		---	6.58	6.33	6.48	6.52	6.31	5.88	5.81	4.34	4.71	5.16
13		---	6.54	6.32	6.50	6.52	6.25	5.94	5.82	4.28	4.84	5.21
14		---	6.49	6.32	6.49	6.52	6.09	5.99	5.80	4.26	4.91	5.36
15		---	6.47	6.33	6.49	6.52	5.92	6.00	5.76	4.24	4.99	5.49
16		---	6.43	6.34	6.49	6.53	5.83	5.99	5.70	4.27	5.00	5.51
17		---	6.42	6.34	6.49	6.53	5.76	5.95	5.61	4.19	4.96	5.71
18		---	6.47	6.34	6.49	6.53	5.67	5.99	5.49	4.11	4.92	5.83
19		---	6.50	6.34	6.48	6.54	5.62	6.07	5.36	4.05	4.95	5.84
20		---	6.52	6.39	6.48	6.55	5.52	6.03	5.25	4.07	5.02	5.84
21		---	6.55	6.41	6.48	6.55	5.48	6.06	5.18	4.11	5.19	5.81
22		---	6.55	6.42	6.49	6.55	5.53	6.06	5.09	4.13	5.23	5.90
23		---	6.54	6.42	6.49	6.56	5.56	6.03	5.02	4.25	5.26	6.13
24		---	6.56	6.45	6.50	6.58	5.55	5.99	4.93	4.27	5.43	6.22
25		---	6.58	6.45	6.50	6.60	5.56	5.91	4.82	4.23	5.61	6.20
26		---	6.59	6.46	6.50	6.61	5.55	5.82	4.76	4.17	5.74	6.13
27		---	6.59	6.44	6.50	6.60	5.53	5.78	4.75	4.15	5.80	6.08
28		---	6.59	6.45	6.50	6.61	5.52	5.73	4.79	4.23	5.80	6.06
29		---	6.59	6.46	6.50	6.65	5.56	5.70	4.89	4.57	5.75	6.01
30		6.69	6.59	6.45	---	7.01	5.65	5.66	4.85	4.85	5.65	5.92
31		---	6.59	6.44	---	10.37	---	5.76	---	4.96	5.55	---
TOTAL		---	204.14	199.46	187.60	206.99	212.97	180.92	162.87	135.45	160.82	168.64
MEAN		---	6.59	6.43	6.47	6.68	7.10	5.84	5.43	4.37	5.19	5.62
MAX		---	6.72	6.59	6.50	10.37	12.98	6.07	5.82	4.96	5.80	6.22
MIN		---	6.42	6.32	6.39	6.50	5.48	5.61	4.75	4.05	4.71	5.14

05083600 MIDDLE BRANCH FOREST RIVER NEAR WHITMAN, ND

LOCATION.--Lat 48°14'50", long 98°07'00", in SE¼NW¼ sec.16, T.155 N., R.58 W., Walsh County, Hydrologic Unit 09020308, 150 ft (46 m) downstream from bridge on State Highway 35, and 6 mi (10 km) north of Whitman.

DRAINAGE AREA.--47.7 mi² (123.5 km²), of which 8.8 mi² (22.8 km²) is noncontributing.

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,510 ft (460 m) from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--20 years, 3.06 ft³/s (0.087 m³/s), 2,220 acre-ft/yr (2.74 hm³/yr); median of yearly mean discharges, 2.1 ft³/s (0.059 m³/s), 1,500 acre-ft/yr (1.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 984 ft³/s (27.9 m³/s) May 19, 1974, gage height, 7.11 ft (2.167 m); no flow for many months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 420 ft³/s (11.9 m³/s) May 27, gage height, 6.10 ft (1.859 m), only peak above base of 70 ft³/s (1.98 m³/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.50	.01	1.9	.00	.00	.78
2	.00	.00	.00	.00	.00	.00	1.8	.00	.98	.00	.00	.74
3	.00	.00	.00	.00	.00	.00	5.0	.00	.56	.00	.00	.78
4	.00	.00	.00	.00	.00	.00	10	.00	.86	.00	.00	2.8
5	.00	.00	.00	.00	.00	.00	15	.00	13	.00	.00	1.9
6	.00	.00	.00	.00	.00	.00	12	.00	32	.00	.00	1.1
7	.00	.00	.00	.00	.00	.00	10	.00	18	.00	.00	.68
8	.00	.00	.00	.00	.00	.00	8.4	.00	7.3	.00	.00	.36
9	.00	.00	.00	.00	.00	.00	7.1	.00	3.0	.00	.00	.29
10	.00	.00	.00	.00	.00	.00	5.4	.00	1.5	.00	.00	.32
11	.00	.00	.00	.00	.00	.00	5.1	.00	.74	.00	.00	.19
12	.00	.00	.00	.00	.00	.00	4.1	.00	.38	.00	.00	.42
13	.00	.00	.00	.00	.00	.00	3.4	.00	.26	.00	.00	.48
14	.00	.00	.00	.00	.00	.00	2.8	.00	.20	.00	.00	.31
15	.00	.00	.00	.00	.00	.00	2.1	.00	.13	.06	.00	.28
16	.00	.00	.00	.00	.00	.00	1.5	.00	.08	12	.00	.24
17	.00	.00	.00	.00	.00	.00	1.1	.00	.06	1.2	1.1	.22
18	.00	.00	.00	.00	.00	.00	.71	.00	.05	1.8	.74	.22
19	.00	.00	.00	.00	.00	.00	.50	.00	.05	.86	.30	.38
20	.00	.00	.00	.00	.00	.00	.34	.00	.02	.46	.31	.40
21	.00	.00	.00	.00	.00	.00	.27	.00	.00	.25	.44	.36
22	.00	.00	.00	.00	.00	.00	.20	.00	.00	.17	.30	.48
23	.00	.00	.00	.00	.00	.00	.16	.00	.00	.12	.26	.31
24	.00	.00	.00	.00	.00	.00	.09	.00	.01	.07	.27	.50
25	.00	.00	.00	.00	.00	.00	.08	.00	.00	.04	.25	.48
26	.00	.00	.00	.00	.00	.00	.07	.00	.00	.01	.23	2.2
27	.00	.00	.00	.00	.00	.00	.06	12	.00	.00	.25	5.5
28	.00	.00	.00	.00	.00	.00	.04	58	.00	.00	.27	3.9
29	.00	.00	.00	.00	.00	.00	.03	21	.00	.00	.38	2.6
30	.00	.00	.00	.00	---	.00	.02	7.5	.00	.00	.48	2.4
31	.00	---	.00	.00	---	.00	---	3.3	---	.00	.38	---
TOTAL	.00	.00	.00	.00	.00	.00	97.87	101.81	81.08	17.04	5.96	31.58
MEAN	.000	.000	.000	.000	.000	.000	3.26	3.28	2.70	.55	.19	1.05
MAX	.00	.00	.00	.00	.00	.00	15	58	32	12	1.1	5.5
MIN	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.19
AC-FT	.00	.00	.00	.00	.00	.00	194	202	161	34	12	63

CAL YR 1979 TOTAL 2903.21 MEAN 7.95 MAX 590 MIN .00 AC-FT 5760
WTR YR 1980 TOTAL 335.30 MEAN .92 MAX 58 MIN .00 AC-FT 665

05084000 FOREST RIVER NEAR FORDVILLE, ND

LOCATION.--Lat 48°11'50", long 97°43'49", on line between secs.32 and 33, T.155 N., R.55 W., Walsh County, Hydrologic Unit 09020308, on right bank 50 ft (15 m) upstream from highway bridge, 0.5 mi (0.8 km) downstream from South Branch, and 3 mi (5 km) southeast of Fordville.

DRAINAGE AREA.--456 mi^2 (1,181 km^2), of which about 120 mi^2 (311 km^2) is probably noncontributing.

PERIOD OF RECORD.--April 1940 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,035 ft (315 m), from topographic map. Prior to July 21, 1951, nonrecording gage at site 50 ft (15 m) downstream at same datum.

REMARKS.--Records fair. Some regulation of high flows by temporary retention in several retarding basins above station. Retarding basins have a combined capacity of about 14,000 acre-ft (17.3 hm^3).

AVERAGE DISCHARGE.--40 years, 38.6 ft^3/s (1.093 m^3/s), 28,000 acre-ft/yr (34.5 hm^3/yr); median of yearly mean discharges, 36 ft^3/s (1.02 m^3/s), 26,100 acre-ft/yr (32 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft^3/s (464 m^3/s) Apr. 18, 1950, gage height, 14.48 ft (4.414 m), from floodmark, from rating curve extended above 5,600 ft^3/s (159 m^3/s) on basis of contracted-opening and slope-area measurements of peak flow; no flow Apr. 1-13, Sept. 3, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 105 ft^3/s (2.97 m^3/s) Apr. 2, gage height, 2.55 ft (0.777 m), backwater from ice; no peak above base of 200 ft^3/s (5.66 m^3/s); minimum daily, 2.4 ft^3/s (0.068 m^3/s), Dec. 17 & 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	10	4.0	5.0	7.5	8.0	70	14	6.2	3.6	3.6	4.0
2	5.0	8.6	4.0	5.0	7.5	8.5	72	14	5.0	3.6	3.6	4.0
3	5.0	7.5	4.0	6.2	7.5	10	95	14	5.0	3.2	3.6	4.0
4	4.4	8.0	4.0	7.0	7.5	10	90	14	7.5	3.2	4.0	4.0
5	4.4	8.0	4.0	7.0	7.5	10	80	13	5.0	3.2	4.4	4.0
6	5.0	6.9	4.0	7.0	7.6	12	85	12	5.0	3.2	3.8	4.0
7	6.2	6.9	4.0	7.0	7.6	13	90	11	5.0	3.2	4.0	4.0
8	6.9	5.6	4.0	7.0	7.6	13	79	11	5.0	3.2	4.0	6.1
9	8.0	5.0	4.0	7.0	7.6	13	66	11	5.0	3.2	5.0	7.5
10	9.2	4.4	4.0	7.0	7.6	13	60	12	5.0	3.2	5.5	7.5
11	8.6	4.0	4.0	7.0	7.6	13	56	11	4.4	3.0	5.5	5.6
12	7.5	4.0	3.5	7.5	7.6	13	46	11	4.4	3.0	8.5	15
13	7.5	4.0	3.0	7.5	7.6	13	43	11	4.4	3.0	8.5	16
14	9.2	4.0	3.0	7.5	7.6	13	38	11	4.4	3.0	6.0	13
15	9.7	4.4	3.0	7.5	7.6	13	34	11	4.4	5.0	6.0	11
16	8.6	5.0	3.0	7.5	7.6	13	31	11	4.4	4.0	6.0	11
17	9.2	6.2	2.4	7.5	7.6	13	28	10	4.4	3.2	9.0	9.7
18	10	6.2	2.4	7.5	7.6	13	28	11	4.0	3.2	8.0	8.6
19	10	6.2	2.7	7.5	7.6	13	25	11	4.0	3.2	8.0	9.7
20	9.7	5.0	3.2	7.5	7.6	13	25	8.6	4.0	3.2	8.5	9.7
21	10	5.0	3.2	7.5	7.6	13	22	6.9	4.0	3.2	12	9.7
22	9.2	4.6	3.2	7.5	7.6	13	20	6.9	4.0	3.2	8.5	9.7
23	10	4.6	3.2	7.5	7.6	13	20	5.6	4.0	3.4	11	8.6
24	11	4.4	3.2	7.5	7.6	13	18	4.4	4.0	3.4	10	11
25	11	4.4	3.2	7.5	7.6	13	18	4.0	4.0	3.4	7.0	18
26	11	4.2	3.6	7.5	7.6	13	17	4.0	3.6	3.4	5.5	15
27	11	4.2	3.6	7.5	7.6	15	18	4.0	3.6	3.4	5.5	10
28	10	4.2	4.0	7.0	7.6	18	16	5.0	3.6	3.4	4.0	10
29	14	4.2	4.0	7.0	7.6	20	14	5.6	3.6	3.4	6.2	11
30	10	4.0	4.4	7.0	---	35	14	4.4	3.6	3.4	4.4	13
31	11	---	5.0	7.5	---	70	---	6.2	---	3.4	4.0	---
TOTAL	280.3	163.7	110.8	220.7	219.9	476.5	1318	289.6	134.5	103.6	193.6	274.4
MEAN	9.04	5.46	3.57	7.12	7.58	15.4	43.9	9.34	4.48	3.34	6.25	9.15
MAX	18	10	5.0	7.5	7.6	70	95	14	7.5	5.0	12	18
MIN	4.4	4.0	2.4	5.0	7.5	8.0	14	4.0	3.6	3.0	3.6	4.0
AC-FT	556	325	220	438	436	945	2610	574	267	205	384	544

CAL YR 1979 TOTAL 37063.8 MEAN 102 MAX 4980 MIN 2.4 AC-FT 73520
WTR YR 1980 TOTAL 3785.6 MEAN 10.3 MAX 95 MIN 2.4 AC-FT 7510

05085000 FOREST RIVER AT MINTO, ND

LOCATION.--Lat 48°16'10", long 97°22'10", in SE¼ sec.31, T.156 N., R.52 W., Walsh County, Hydrologic Unit 09020308, on right bank 30 ft (9 m) upstream from dam in Minto, 150 ft (45 m) upstream from Burlington Northern Railway bridge, and 900 ft (270 m) east of U.S. Highway 81.

DRAINAGE AREA.--740 mi² (1,920 km²), of which about 120 mi² (310 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1944 to current year.

REVISED RECORDS.--WSP 1438: 1948-50. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 806.95 ft (245.958 m) National Geodetic Vertical Datum of 1929. Prior to July 15, 1954, nonrecording gage at site 400 ft (120 m) upstream at same datum.

REMARKS.--Records fair. Occasionally during high stages, particularly when the channel is filled with snow, overflow occurs 0.5 mi (0.8 km) below the municipality of Forest River and bypasses the gage 3 mi (5 km) south of Minto and flows into Lake Ardoch. Bypass flow is not included in computation of discharge record for station at Minto.

AVERAGE DISCHARGE.--36 years, 51.0 ft³/s (1.444 m³/s), 36,950 acre-ft/yr (45.6 hm³/yr); median of yearly mean discharges, 46 ft³/s (1.30 m³/s), 33,300 acre-ft/yr (41 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,600 ft³/s (470 m³/s) Apr. 18, 1950, gage height, 11.80 ft (3.597 m) from floodmarks, from rating curve extended above 7,200 ft³/s (204 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times each year 1945-47, 1953-55, 1959-64.

EXTREMES FOR CURRENT YEAR.-- Maximum discharge, 167 ft³/s (4.73 m³/s) Apr. 1, gage height, 2.01 ft (0.613 m), no peak above base of 200 ft³/s (5.66 m³/s); minimum daily discharge, 0.78 ft³/s (0.022 m³/s) Aug. 8-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	8.1	6.0	1.6	.95	1.2	59	20	9.1	5.2	.80	3.0
2	9.3	8.6	6.0	1.4	.94	1.2	125	19	8.8	5.0	.80	2.6
3	8.8	8.6	5.9	1.1	.94	1.2	117	20	8.6	4.5	.80	2.6
4	9.4	9.0	5.9	1.1	.93	1.2	117	19	9.0	3.5	.80	2.3
5	9.9	9.0	6.4	1.0	.94	1.5	128	16	9.6	3.5	.80	2.3
6	9.1	9.0	6.5	1.0	.97	1.7	148	16	10	3.5	.80	2.3
7	9.2	8.5	6.4	1.0	1.0	1.6	152	15	11	3.6	.80	2.2
8	7.9	8.0	6.2	1.0	1.1	1.6	131	13	10	2.9	.78	2.1
9	7.5	7.5	6.2	1.0	1.1	1.6	106	13	9.8	2.1	.78	2.0
10	8.1	8.0	6.1	1.0	1.3	1.5	93	13	9.4	1.7	.78	1.8
11	8.4	8.2	6.0	1.0	1.4	1.6	86	13	8.8	1.7	.78	1.0
12	9.0	8.5	5.6	1.0	1.6	1.5	76	13	8.3	1.6	.78	1.6
13	8.8	8.5	5.4	1.0	1.7	1.6	88	13	8.3	1.1	.78	1.6
14	8.1	8.5	5.2	1.2	1.8	1.6	79	12	7.6	1.9	.78	3.4
15	7.7	8.5	5.2	1.1	1.6	1.6	76	12	7.3	1.6	.78	4.2
16	6.9	8.5	5.1	1.0	1.5	2.0	69	11	6.8	1.5	.80	4.0
17	8.2	9.5	3.8	1.0	1.5	2.5	57	11	6.6	.95	.80	3.7
18	8.8	9.5	3.8	1.0	1.4	2.8	46	11	6.5	.92	.85	3.3
19	9.8	9.2	3.6	1.0	1.4	3.6	44	11	6.3	.90	.85	3.3
20	9.5	9.2	3.5	1.0	1.5	3.7	41	10	6.5	.90	.95	3.4
21	8.8	8.6	3.3	1.0	1.6	3.9	36	10	6.6	.90	1.7	3.0
22	8.6	8.0	3.1	1.0	1.6	4.4	33	11	6.1	.85	1.3	3.0
23	7.2	8.0	2.9	1.0	1.6	5.1	29	10	6.2	.85	2.3	2.7
24	6.3	7.9	2.8	1.0	1.6	6.3	28	10	6.0	.85	3.0	2.6
25	6.3	7.8	2.6	1.0	1.4	10	26	10	5.1	.85	2.6	2.5
26	6.6	7.6	2.2	1.0	1.4	9.6	26	10	4.0	.85	2.0	3.0
27	6.5	7.4	2.2	1.0	1.4	16	24	9.7	4.1	.85	3.0	3.5
28	7.2	7.3	2.0	1.0	1.2	19	23	9.5	4.4	.85	2.6	5.9
29	6.6	6.2	1.7	.95	1.2	25	23	9.6	4.1	.80	2.3	5.8
30	6.6	6.2	1.8	.95	---	48	21	9.4	5.0	.80	2.0	4.6
31	7.2	---	1.6	.95	---	69	---	9.3	---	.80	2.0	---
TOTAL	252.2	247.4	135.0	32.35	38.57	253.1	2107	389.5	219.9	57.82	40.89	89.3
MEAN	8.14	8.25	4.35	1.04	1.33	8.16	70.2	12.6	7.33	1.87	1.32	2.98
MAX	10	9.5	6.5	1.6	1.8	69	152	20	11	5.2	3.0	5.9
MIN	6.3	6.2	1.6	.95	.93	1.2	21	9.3	4.0	.80	.78	1.0
AC-FT	500	491	268	64	77	502	4180	773	436	115	81	177

CAL YR 1979 TOTAL 52455.80 MEAN 144 MAX 6140 MIN 1.0 AC-FT 104000
WTR YR 1980 TOTAL 3863.03 MEAN 10.6 MAX 152 MIN .78 AC-FT 7660

05085000 FOREST RIVER AT MINTO, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
NOV									
19...	1145	9.3	888	8.1	1.0	410	120	95	42
DEC									
21...	1150	2.3	1020	7.7	.5	480	130	110	50
FEB									
05...	1100	.93	1160	7.2	.0	500	140	110	55
MAR									
04...	1215	2.8	1010	7.6	.0	460	150	110	45
27...	1525	19	760	7.5	1.0	300	87	72	29
APR									
03...	1930	141	440	8.1	1.0	180	62	43	18
MAY									
07...	1645	15	750	8.6	10.0	360	86	88	34
JUN									
05...	1120	9.7	770	8.1	18.0	350	90	83	35
JUL									
08...	1830	2.6	805	8.2	24.0	340	82	78	35
AUG									
13...	1450	.76	832	8.4	20.5	320	73	72	34
SEP									
10...	1800	2.4	678	8.1	17.5	290	60	65	31

DATE	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
NOV									
19...	32	14	.7	4.5	360	0	295	4.6	150
DEC									
21...	37	14	.7	5.1	428	0	351	14	170
FEB									
05...	64	22	1.2	5.9	445	0	365	45	180
MAR									
04...	62	22	1.3	4.5	378	0	310	15	170
27...	39	22	1.0	5.3	259	0	212	13	120
APR									
03...	18	17	.6	7.6	146	0	120	1.9	73
MAY									
07...	31	16	.7	5.6	334	0	274	1.3	140
JUN									
05...	34	17	.8	4.6	319	0	262	4.1	140
JUL									
08...	40	20	.9	4.8	313	0	257	3.2	130
AUG									
13...	53	26	1.3	5.8	301	0	247	1.9	120
SEP									
10...	36	21	.9	4.3	280	0	230	3.6	100

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)
NOV									
19...	34	.2	16	551	.74	13.7	230	0	140
DEC									
21...	38	.3	21	643	.94	4.28	190	10	340
FEB									
05...	75	.3	27	738	1.07	1.98	260	80	1500
MAR									
04...	68	.2	25	678	.97	5.41	260	30	850
27...	44	.1	18	461	.68	25.9	230	70	560
APR									
03...	22	.2	13	272	.35	99.4	130	70	140
MAY									
07...	19	.2	19	503	.66	19.6	0	20	150
JUN									
05...	27	.2	26	511	.69	13.4	160	0	730
JUL									
08...	38	.3	24	506	.70	3.63	0	40	390
AUG									
13...	58	.2	28	522	.70	1.05	180	80	130
SEP									
10...	28	.3	22	426	.60	2.86	90	10	230

05088500 HOMME LAKE NEAR PARK RIVER, ND

LOCATION.--Lat 48°24'20", long 97°47'10", in SE¼NW¼ sec.19, T.157 N., R.55 W., Walsh County, Hydrologic Unit 09020310, at Homme Dam on South Branch Park River, and 2 mi (3 km) west of town of Park River.

DRAINAGE AREA.--226 mi² (585 km²).

PERIOD OF RECORD.--September 1949 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth-fill dam, 865 ft (264 m) long; storage began in September 1949, dam completed in October 1950. Usable capacity between invert of outlet, elevation, 1,048.0 ft (319.43 m), and crest of spillway, elevation, 1,080.0 ft (329.18 m), is 3,550 acre-ft (4.38 hm³). Dead storage is 100 acre-ft (0.12 hm³). Low flows are controlled by two sluice gates 3 x 5 ft (0.914 x 1.524 m). The spillway, which is 150 ft (46 m) long, is uncontrolled. The records herein represent total contents. The reservoir is operated for flood control, water supply, and pollution abatement during low-flow periods.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,710 acre-ft (5.81 hm³) Apr. 20, 1979, elevation, 1,084.58 ft (330.580 m); minimum since first reaching spillway level, 184 acre-ft (0.23 hm³) Feb. 8, 1952, elevation, 1,051.22 ft (320.412 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,790 acre-ft (4.67 hm³) May 28, elevation, 1,080.67 ft (329.388 m); minimum, 2,500 acre-ft (3.08 hm³) Jan. 18, elevation, 1,073.92 ft (327.331 m).

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,076.38	2,970	—
Oct. 31	1,076.44	2,980	+10
Nov. 30	1,075.64	2,830	-150
Dec. 31	1,074.22	2,560	-270
CAL YR 1979	—	—	-330
Jan. 31	1,074.19	2,560	0
Feb. 29	1,074.81	2,670	+110
Mar. 31	1,075.40	2,790	+120
Apr. 30	1,080.13	3,680	+890
May 31	1,080.30	3,720	+40
June 30	1,079.37	3,540	-180
July 31	1,079.54	3,570	+30
Aug. 31	1,080.10	3,680	+110
Sept. 30	1,080.23	3,700	+20
WTR YR 1980	—	—	+730

05089000 SOUTH BRANCH PARK RIVER BELOW HOMME DAM, ND

LOCATION.—Lat 48°24'07", long 97°46'55", in SE¼ sec.19, T.157 N., R.55 W., Walsh County, Hydrologic Unit 09020310, on right bank 0.5 mi (0.8 km) downstream from Homme Dam, and 2 mi (3 km) west of town of Park River.

DRAINAGE AREA.—226 mi² (585 km²).

PERIOD OF RECORD.—October 1949 to current year. Monthly discharge only for October and November 1949, published in WSP 1308.

REVISED RECORDS.—WSP 1728: Drainage area.

GAGE.—Water-stage recorder. Datum of gage is 1,000.00 ft (304.800 m) National Geodetic Vertical Datum of 1929.

REMARKS.—Records poor. Flow regulated by Homme Lake (station 05088500).

AVERAGE DISCHARGE.—31 years, 27.3 ft³/s (0.773 m³/s), 19,780 acre-ft/yr (24.4 hm³/yr); median of yearly mean discharges, 22 ft³/s (0.62 m³/s), 15,900 acre-ft/yr (20 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, about 13,000 ft³/s (368 m³/s) Apr. 24, 1950, gage height, 37.52 ft (11.436 m), from rating curve extended above 5,500 ft³/s (156 m³/s), result of failure of emergency embankment at site of Homme Dam; no flow Oct. 1 to Dec. 3, 1949, Oct. 1-4, 1969, Sept. 21, 1970, July 1, 1974.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 211 ft³/s (5.98 m³/s) May 28, gage height, 24.67 ft (7.519 m); minimum daily, 0.15 ft³/s (0.004 m³/s) Mar. 7-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	.60	4.0	2.3	.65	.25	.55	3.0	29	.80	1.1	6.7
2	3.6	.58	4.0	2.3	.65	.25	.60	2.5	14	.80	1.2	8.4
3	3.9	.55	4.0	2.3	.60	.20	10	3.1	9.0	.90	1.0	9.2
4	.41	.50	4.0	2.0	.60	.19	50	5.0	90	.80	1.2	15
5	.40	.45	4.0	1.5	.55	.18	123	4.5	130	.80	.87	2.7
6	.40	.40	4.0	1.3	.50	.17	138	1.3	68	1.0	.97	2.3
7	.38	.40	4.0	1.2	.50	.15	114	1.1	37	.90	.97	3.0
8	.36	.40	4.0	1.1	.50	.15	77	.91	23	.90	.97	7.0
9	.35	.40	4.0	1.1	.50	.15	58	.58	9.4	.91	.91	5.7
10	.35	.39	4.0	1.1	.50	.15	40	3.4	6.5	.58	.91	2.1
11	.35	.38	3.8	1.1	.50	.15	31	4.0	7.7	.91	.84	1.5
12	.35	.37	3.8	1.1	.45	.15	30	.97	6.7	.78	.72	6.3
13	.35	.36	3.8	1.0	.45	.15	25	.47	12	.78	1.2	9.7
14	.34	.35	3.8	1.0	.45	.15	20	.38	15	.67	1.1	8.9
15	.33	.34	3.8	1.0	.45	.15	18	.72	15	.78	1.2	16
16	.32	.33	3.6	1.0	.45	.15	17	.72	13	.84	1.3	8.9
17	.31	.32	3.4	1.0	.45	.15	17	.58	7.5	.84	1.4	4.9
18	.30	.31	3.3	1.0	.40	.15	16	1.0	7.9	.91	1.0	10
19	.30	.30	3.1	.95	.40	.16	15	.91	4.2	.91	1.0	15
20	.30	4.0	2.9	.95	.40	.18	14	1.4	1.5	.97	1.0	14
21	.30	14	2.8	.95	.40	.20	13	.84	1.5	.97	7.5	19
22	.30	14	2.7	.90	.40	.25	12	.47	1.0	1.1	3.1	27
23	.29	15	2.7	.90	.40	.30	11	.35	1.0	1.1	3.1	21
24	.28	15	2.7	.85	.35	.35	10	.28	1.0	1.0	2.9	33
25	.27	14	2.8	.85	.35	.40	9.0	.24	.80	1.0	3.4	44
26	.26	14	2.8	.80	.35	.41	8.0	.23	.80	1.1	2.5	39
27	.25	13	2.8	.80	.35	.42	7.0	11	1.0	1.1	2.3	25
28	.25	10	2.8	.75	.30	.43	6.0	177	1.0	1.0	2.1	20
29	.25	5.0	2.5	.75	.30	.44	5.0	108	.80	1.1	2.5	17
30	.25	5.0	2.4	.70	---	.45	4.0	57	.80	1.1	3.4	19
31	.50	---	2.3	.70	---	.50	---	31	---	1.1	2.3	---
TOTAL	20.30	130.73	104.6	35.25	13.15	7.53	899.15	422.95	516.10	28.45	55.96	421.3
MEAN	.65	4.36	3.37	1.14	.45	.24	30.0	13.6	17.2	.92	1.81	14.0
MAX	3.9	15	4.0	2.3	.65	.50	138	177	130	1.1	7.5	44
MIN	.25	.30	2.3	.70	.30	.15	.55	.23	.80	.58	.72	1.5
AC-FT	40	259	207	70	26	15	1780	839	1020	56	111	836

CAL YR 1979 TOTAL 23463.90 MEAN 64.3 MAX 4870 MIN .25 AC-FT 46540
WTR YR 1980 TOTAL 2655.47 MEAN 7.26 MAX 177 MIN .15 AC-FT 5270

05089100 MIDDLE BRANCH PARK RIVER NEAR UNION, ND

LOCATION.--Lat 48°32'32", long 98°01'10", on north line of sec.5, T.158 N., R.57 W., Walsh County, Hydrologic Unit 09020310, on left bank 20 ft (6 m) downstream from bridge on county highway between Walsh and Cavalier Counties, and 3.5 mi (5.6 km) southwest of Union.

DRAINAGE AREA.--15.3 mi² (39.6 km²).

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,495 ft (456 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--15 years, 2.30 ft³/s (0.065 m³/s), 1,670 acre-ft/yr (2.06 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 960 ft³/s (27.2 m³/s) Apr. 20, 1979, gage height, 6.16 ft (1.878 m), backwater from ice; maximum gage height, 7.51 ft (2.289 m) May 4, 1966, from floodmark, backwater from snowdrift; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft³/s (0.57 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 1	1530	22	0.62	a3.14	0.957	May 26	2230	*112	3.17	3.67	1.119

No flow for several months.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.07	.03	.00	.00	.00	15	.20	.97	.07	.00	1.8
2	.09	.04	.03	.00	.00	.00	14	.20	.83	.06	.00	1.0
3	.04	.04	.03	.00	.00	.00	13	.20	.47	.02	.02	.77
4	.06	.03	.03	.00	.00	.00	16	.20	.77	.01	.04	1.7
5	.06	.02	.03	.00	.00	.00	12	.20	.97	.01	.03	.83
6	.03	.02	.02	.00	.00	.00	8.0	.17	.57	.01	.03	.37
7	.03	.02	.02	.00	.00	.00	7.8	.17	.26	.02	.03	.20
8	.04	.02	.02	.00	.00	.00	5.0	.15	.15	.02	.02	.22
9	.04	.02	.02	.00	.00	.00	3.2	.13	.10	.02	.02	.24
10	.04	.02	.01	.00	.00	.00	2.5	.12	.09	.02	.04	.26
11	.04	.03	.01	.00	.00	.00	2.1	.10	.07	.01	.08	.20
12	.04	.03	.01	.00	.00	.00	1.5	.09	.04	.00	.08	.77
13	.06	.03	.00	.00	.00	.00	1.0	.09	.07	.00	.07	1.8
14	.06	.03	.00	.00	.00	.00	.97	.09	.13	.00	.03	1.5
15	.04	.04	.00	.00	.00	.00	.83	.09	.13	.08	.01	1.1
16	.04	.04	.00	.00	.00	.00	.63	.09	.10	.15	.01	.83
17	.06	.04	.00	.00	.00	.00	.47	.10	.07	.10	.83	.63
18	.04	.04	.00	.00	.00	.00	.42	.10	.06	.09	.90	.63
19	.06	.04	.00	.00	.00	.00	.42	.10	.06	.06	.26	1.2
20	.04	.04	.00	.00	.00	.00	.37	.09	.06	.07	.15	2.2
21	.06	.04	.00	.00	.00	.00	.32	.07	.06	.07	.20	2.4
22	.04	.04	.00	.00	.00	.00	.30	.06	.03	.06	.17	5.2
23	.06	.04	.00	.00	.00	.00	.30	.06	.03	.02	.13	3.6
24	.04	.04	.00	.00	.00	.00	.30	.04	.02	.01	.12	2.7
25	.04	.04	.00	.00	.00	.00	.30	.03	.02	.01	.08	2.0
26	.04	.04	.00	.00	.00	.00	.25	10	.02	.01	.08	1.5
27	.04	.04	.00	.00	.00	.10	.25	18	.04	.00	.06	1.2
28	.06	.04	.00	.00	.00	.30	.25	2.7	.07	.00	.09	.97
29	.06	.04	.00	.00	.00	.50	.25	2.1	.07	.00	2.0	.83
30	.04	.04	.00	.00	---	4.0	.25	1.4	.07	.00	2.5	.69
31	.04	---	.00	.00	---	10	---	1.1	---	.00	2.8	---
TOTAL	1.46	1.06	.26	.00	.00	14.90	107.98	38.24	6.40	1.00	10.88	39.34
MEAN	.047	.035	.008	.000	.000	.48	3.60	1.23	.21	.032	.35	1.31
MAX	.09	.07	.03	.00	.00	10	16	18	.97	.15	2.8	5.2
MIN	.03	.02	.00	.00	.00	.00	.25	.03	.02	.00	.00	.20
AC-FT	2.9	2.1	.5	.00	.00	30	214	76	13	2.0	22	78

CAL YR 1979 TOTAL 1951.45 MEAN 5.35 MAX 670 MIN .00 AC-FT 3870
WTR YR 1980 TOTAL 221.52 MEAN .61 MAX 18 MIN .00 AC-FT 439

05089500 CART CREEK AT MOUNTAIN, ND

LOCATION.--Lat 48°40'37", long 97°51'41", in SW¼ sec.15, T.160 N., R.56 W., Pembina County, Hydrologic Unit 09020310, on right bank 50 ft (15 m) downstream from bridge on State Highway 32, and 0.7 mi (1.1 km) south of Mountain.

DRAINAGE AREA.--16.9 mi^2 (43.8 km^2).

PERIOD OF RECORD.--June 1954 to current year.

GAGE.--Water-stage recorder and wooden control. Datum of gage is 1,027.40 ft (313.152 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--26 years, 2.84 ft^3/s (0.080 m^3/s), 2,060 acre-ft/yr (2.54 hm^3/yr); median of yearly mean discharges, 2.8 ft^3/s (0.08 m^3/s), 2,000 acre-ft/yr (2.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,300 ft^3/s (36.8 m^3/s) June 18, 1964, gage height, 9.18 ft (2.798 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft^3/s (0.85 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 3	2230	*74	2.10	^{a}3.38	1.030
Aug. 17	1130	34	.96	3.02	.920
Aug. 21	0530	59	1.67	3.23	.984
Aug. 28	1600	48	1.36	3.14	.957
Sept. 12	1600	44	1.25	3.11	0.948
Sept. 19	1700	34	.96	3.02	.920
Sept. 21	2400	40	1.13	3.08	.939

No flow for several months.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.38	1.0	.30	.00	.00	.00	35	1.1	.21	.02	.00	1.4
2	.42	.74	.30	.00	.00	.00	45	1.0	.16	.00	.00	.98
3	.38	.64	.35	.00	.00	.00	60	1.0	.24	.00	.00	.74
4	.42	.64	.35	.00	.00	.00	35	.98	.42	.00	.00	.74
5	.46	.64	.40	.00	.00	.00	30	.92	.16	.00	.00	.50
6	.42	.59	.40	.00	.00	.00	25	.85	.07	.00	.00	.42
7	.46	.55	.35	.00	.00	.00	20	.92	.07	.00	.00	.31
8	.50	.55	.30	.00	.00	.00	15	.92	.07	.00	.00	.92
9	.50	.55	.20	.00	.00	.00	10	.92	.05	.00	.00	.98
10	.50	.46	.15	.00	.00	.00	8.0	.92	.05	.00	1.4	.50
11	.55	.45	.10	.00	.00	.00	7.2	.92	.05	.00	1.4	.50
12	.55	.45	.08	.00	.00	.00	3.6	.92	.03	.00	6.4	22
13	.50	.50	.05	.00	.00	.00	3.3	.92	.04	.00	4.2	16
14	.59	.55	.05	.00	.00	.00	3.6	.85	6.0	.00	1.3	6.6
15	.59	.55	.05	.00	.00	.00	3.3	.85	1.4	.00	.38	4.0
16	.59	.60	.10	.00	.00	.00	3.3	.79	.55	4.5	.27	2.6
17	.59	.80	.08	.00	.00	.00	3.3	.74	.27	.50	17	2.8
18	.64	.80	.04	.00	.00	.00	3.1	.64	.16	.18	5.8	6.9
19	.69	.70	.03	.00	.00	.00	2.9	.59	.10	.07	1.6	15
20	.69	.55	.02	.00	.00	.00	2.6	.55	.06	.11	1.1	13
21	.55	.55	.02	.00	.00	.00	2.2	.42	.04	2.1	21	14
22	.55	.40	.02	.00	.00	.00	1.8	.35	.02	.27	3.8	20
23	.59	.35	.01	.00	.00	.00	1.6	.38	.00	.10	1.6	8.5
24	.59	.35	.01	.00	.00	.00	1.4	.31	.00	.02	.85	5.8
25	.59	.35	.01	.00	.00	.00	1.4	.27	.00	.00	.69	4.2
26	.64	.35	.01	.00	.00	.00	1.4	.29	.00	.00	.55	3.3
27	.64	.30	.01	.00	.00	.00	1.4	2.6	.00	.00	.38	2.8
28	.69	.30	.00	.00	.00	.00	1.3	.59	.08	.00	12	2.4
29	.64	.30	.00	.00	.00	.92	1.3	.38	.06	.00	15	2.1
30	.64	.30	.00	.00	---	6.3	1.2	.35	.04	.00	6.1	1.8
31	.74	---	.00	.00	---	15	---	.31	---	.00	1.8	---
TOTAL	17.28	15.86	3.79	.00	.00	22.22	334.2	23.55	10.42	7.87	104.62	161.79
MEAN	.56	.53	.12	.000	.000	.72	11.1	.76	.35	.25	3.37	5.39
MAX	.74	1.0	.40	.00	.00	15	60	2.6	6.0	4.5	21	22
MIN	.38	.30	.00	.00	.00	.00	1.2	.27	.00	.00	.00	.31
AC-FT	34	31	7.5	.00	.00	44	663	47	21	16	208	321

CAL YR 1979 TOTAL 2216.84 MEAN 6.07 MAX 600 MIN .00 AC-FT 4400
WTR YR 1980 TOTAL 701.60 MEAN 1.92 MAX 60 MIN .00 AC-FT 1390

05090000 PARK RIVER AT GRAFTON, ND

LOCATION.--Lat 48°25'24", long 97°24'30", in NE¼ sec.13, T.157 N., R.53 W., Walsh County, Hydrologic Unit 09020310, on right bank 30 ft (9 m) upstream from Wakeman Avenue bridge in Grafton, and 3.5 mi (5.6 km) downstream from South Branch.

DRAINAGE AREA.--695 mi^2 (1,800 km^2), approximately.

PERIOD OF RECORD.--April 1931 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 955: 1941. WSP 1438: 1932, 1933(M), 1936-37(M), 1939(M), 1944. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 807.39 ft (246.092 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1940, nonrecording gage at site 30 ft (9 m) downstream at same datum. Oct. 1, 1940, to Sept. 17, 1946, nonrecording gage at site 2 mi (3 km) downstream above masonry dam at same datum. Sept. 18, 1946, to July 25, 1952, nonrecording gage at site 30 ft (9 m) downstream at same datum.

REMARKS.- Records fair. Flow regulated by Homme Lake (station 05088500) and several small reservoirs. Diversion by city of Grafton started in 1955. Figures of daily discharge do not include diversion by city of Grafton.

AVERAGE DISCHARGE (UNADJUSTED).--49 years (water years 1932-80), 57.9 ft^3/s (1.640 m^3/s), 41,950 acre-ft/yr (51.7 hm^3/yr); median of yearly mean discharges, 38 ft^3/s (1.08 m^3/s), 27,500 acre-ft/yr (34 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft^3/s (357 m^3/s) Apr. 19, 1950, gage height, 20.13 ft (6.136 m), result of dam failure, from rating curve extended above 9,000 ft^3/s (255 m^3/s); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 399 ft^3/s (11.3 m^3/s) Apr. 7, gage height, 9.09 ft (2.771 m); minimum daily, 0.10 ft^3/s (0.003 m^3/s) Oct. 11-30 and July 11-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	3.6	10	2.8	1.6	.90	11	15	20	1.7	.38	5.2
2	.69	2.1	9.7	3.7	1.4	.85	12	14	17	2.0	.29	4.0
3	1.8	2.7	7.2	3.5	1.3	.93	14	14	11	2.6	.28	4.0
4	1.2	3.7	5.3	3.1	1.3	.86	29	10	10	2.3	1.4	7.1
5	.57	3.7	5.2	3.0	1.4	.79	61	9.0	72	3.5	.99	19
6	.52	4.1	5.3	2.6	1.5	.73	282	10	105	2.3	.87	22
7	.37	4.6	5.4	3.0	1.6	.77	385	8.0	50	2.3	.62	11
8	.20	3.7	5.0	3.4	1.6	.73	343	8.0	49	.80	.69	5.8
9	.20	3.1	4.6	2.5	1.7	.76	291	8.0	34	.22	.60	4.1
10	.20	3.0	4.6	2.3	1.3	.91	216	8.0	20	.15	.67	3.7
11	.10	3.0	5.5	3.1	1.3	.84	172	7.0	14	.10	.61	6.3
12	.10	3.1	4.8	1.9	1.4	.85	134	4.6	11	.10	2.2	12
13	.10	3.2	3.5	1.7	1.4	.84	99	6.0	20	.10	.79	5.4
14	.10	2.5	3.7	2.1	1.4	.84	94	7.0	114	.10	.56	5.6
15	.10	2.7	3.7	2.3	1.5	.96	78	5.2	61	.10	.54	7.7
16	.10	2.1	3.1	1.6	1.4	.94	67	4.0	23	.10	.63	7.3
17	.10	2.4	3.5	1.5	1.3	1.1	61	3.5	15	.10	2.2	16
18	.10	2.4	3.7	1.8	1.3	.59	56	3.5	11	.10	.96	13
19	.10	2.2	3.1	3.0	1.2	1.0	52	3.5	10	.10	1.9	35
20	.10	2.0	2.6	2.9	1.2	.87	47	3.0	10	.10	6.8	45
21	.10	1.7	3.0	2.1	1.2	1.3	41	4.0	10	.10	3.1	50
22	.10	1.4	3.1	3.2	1.3	.60	36	2.6	8.0	.10	.90	47
23	.10	1.1	3.2	3.2	1.1	.73	32	2.3	4.6	.10	3.7	64
24	.10	5.1	3.1	2.3	1.1	3.5	26	2.6	5.2	.10	3.3	72
25	.10	15	2.9	2.3	1.2	5.2	23	2.3	3.5	.10	1.9	109
26	.10	17	3.3	2.0	1.1	3.5	21	1.7	3.0	.15	2.4	129
27	.10	18	3.1	1.9	1.1	4.0	19	1.7	10	.15	2.8	146
28	.10	18	2.6	1.9	1.1	6.0	17	2.3	7.0	.15	2.1	132
29	.10	17	3.3	1.6	.98	8.0	16	97	3.0	.15	8.5	109
30	.10	13	2.6	1.7	---	10	16	63	2.6	.25	4.7	92
31	.50	---	2.9	1.5	---	11	---	49	---	.53	5.0	---
TOTAL	9.65	167.2	132.6	75.7	38.28	70.89	2772	379.8	733.9	20.75	62.38	1189.2
MEAN	.31	5.57	4.28	2.44	1.32	2.29	92.4	12.3	24.5	.67	2.01	39.6
MAX	1.8	18	10	3.7	1.7	11	385	97	114	3.5	8.5	146
MIN	.10	1.1	2.6	1.5	.98	.59	11	1.7	2.6	.10	.28	3.7
AC-FT	19	332	263	150	76	141	5500	753	1460	41	124	2360
(+)	53	54	45	49	0	49	52	70	66	55	54	10
MEAN*	1.18	6.48	5.01	3.24	1.32	3.09	93.3	13.4	25.6	1.51	2.90	39.8
AC-FT*	72	386	308	199	76	190	5550	823	1520	96	179	2370

			OBSERVED								ADJUSTED	
CAL YR 1979	TOTAL	56180.56	MEAN	154	MAX	8300	MIN	.10	AC-FT	111400	MEAN	155	AC-FT	112000
CAL YR 1980	TOTAL	5652.35	MEAN	15.4	MAX	385	MIN	.10	AC-FT	11210	MEAN	16.2	AC-FT	11800

+ Diversion in acre-feet by city of Grafton.
* Adjusted for diversion by city of Grafton.

05092000 RED RIVER OF THE NORTH AT DRAYTON, ND

LOCATION.--Lat 48°34'20", long 97°08'50", in SE¼SE¼SE¼ sec.24, T.159 N., R.51 W., Pembina County, Hydrologic Unit 09020311, on downstream end of east pier of interstate highway bridge, 1.5 mi (2.4 km) northeast of Drayton, and at mile 206.7 (332.6 km).

DRAINAGE AREA.--34,800 mi^2 (90,130 km^2), approximately, includes 3,800 mi^2 (9,840 km^2) in closed basins.

PERIOD OF RECORD.--April 1936 to June 1937, April 1941 to current year (fragmentary prior to April 1949).

REVISED RECORDS.--WSP 1388: 1949-50. WSP 1728: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 755.00 ft (230.124 m) National Geodetic Vertical Datum of 1929 (Minnesota highway benchmark). Prior to Nov. 30, 1954, nonrecording gage at site 1.5 mi (2.4 km) upstream at datum 1.59 ft (0.485 m) higher.

REMARKS.--Records good. Some regulation by reservoirs on tributaries.

AVERAGE DISCHARGE.--31 years (1949-80), 3,843 ft^3/s (108.8 m^3/s), 2,784,000 acre-ft/yr (3.43 km^3/yr); median of yearly mean discharges, 2,650 ft^3/s (75.0 m^3/s), 1,920,000 acre-ft/yr (2.4 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,900 ft^3/s (2,630 m^3/s) Apr. 28, 1979, gage height, 43.66 ft (13.308 m); minimum observed, 7.7 ft^3/s (0.22 m^3/s) Oct. 16, 1936, gage height, 1.75 ft (0.533 m), former site and datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 1897 reached a stage of about 41 ft (12.5 m), at site and datum in use prior to Nov. 30, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,400 ft^3/s (634 m^3/s) Apr. 10, gage height, 29.00 ft (8.839 m); minimum, 388 ft^3/s (11.0 m^3/s) Aug. 8, gage height, 9.45 ft (2.880 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1710	1840	1210	1470	1400	1490	5300	2920	1440	1190	530	640
2	1690	1930	1220	1450	1460	1490	7000	2840	1380	1180	495	1230
3	1640	2040	1230	1430	1480	1500	8200	2750	1330	1150	474	2620
4	1640	2120	1260	1410	1480	1500	9580	2670	1310	1130	448	2530
5	1590	2180	1260	1400	1500	1510	11400	2600	1300	1120	424	1940
6	1620	2270	1260	1380	1480	1530	14800	2530	1280	1130	436	1450
7	1620	2320	1290	1380	1470	1550	20300	2470	1340	1100	412	1140
8	1620	2100	1420	1380	1460	1590	21700	2420	1380	1070	394	900
9	1630	2110	1600	1380	1460	1600	22200	2350	1420	1010	400	770
10	1670	1900	1760	1380	1460	1590	22300	2270	1490	990	400	632
11	1690	1500	1770	1380	1450	1590	21600	2210	1540	890	394	481
12	1660	1300	1770	1380	1450	1600	20300	2150	1510	850	418	460
13	1630	1480	1770	1380	1450	1600	17300	2110	1550	810	406	488
14	1590	1600	1800	1380	1450	1610	13300	2060	1760	734	412	530
15	1590	1620	1710	1380	1460	1610	10700	2060	1940	698	406	516
16	1600	1700	1600	1380	1460	1610	9000	2060	1940	632	424	481
17	1640	1880	1540	1380	1460	1600	7900	2040	1840	558	495	488
18	1640	2010	1500	1380	1460	1590	6900	2030	1780	516	565	495
19	1640	2160	1490	1380	1460	1590	6100	2000	1700	495	565	558
20	1640	2290	1490	1380	1460	1550	5500	1960	1600	495	565	593
21	1640	2340	1480	1380	1460	1520	5100	1900	1590	495	551	624
22	1660	2120	1480	1380	1460	1520	4800	1840	1700	516	558	632
23	1700	1960	1480	1380	1460	1520	4700	1770	1740	530	551	640
24	1730	1690	1480	1380	1460	1530	4500	1700	1730	523	544	608
25	1740	1580	1480	1380	1470	1550	4200	1630	1600	537	516	608
26	1730	1510	1480	1380	1470	1580	3600	1560	1480	537	537	624
27	1710	1350	1480	1380	1470	1600	3440	1510	1400	509	551	640
28	1710	1160	1480	1380	1480	1650	3210	1480	1350	502	558	680
29	1710	930	1480	1370	1480	1850	3090	1450	1290	530	572	680
30	1700	1010	1480	1370	---	2250	3000	1430	1240	530	565	707
31	1710	---	1480	1380	---	3400	---	1460	---	544	586	---
TOTAL	51490	54000	46230	43020	42420	51270	301220	64230	45950	23501	15152	25385
MEAN	1661	1800	1491	1388	1463	1654	10040	2072	1532	758	489	846
MAX	1740	2340	1800	1470	1500	3400	22300	2920	1940	1190	586	2620
MIN	1590	930	1210	1370	1400	1490	3000	1430	1240	495	394	460
AC-FT	102100	107100	91700	85330	84140	101700	597500	127400	91140	46610	30050	50350

CAL YR 1979 TOTAL 2654610 MEAN 7273 MAX 91000 MIN 705 AC-FT 5265000
WTR YR 1980 TOTAL 763868 MEAN 2087 MAX 22300 MIN 394 AC-FT 1515000

05092200 PEMBINA COUNTY DRAIN 20 NEAR GLASSTON, ND

LOCATION.--Lat 48°41'49", long 97°23'03", in NW¼ sec.8, T.160 N., R.52 W., Pembina County, Hydrologic Unit 09020311, on left bank 50 ft (15 m) downstream from bridge on county highway, and 3 mi (5 km) southeast of Glasston.

DRAINAGE AREA.--80 mi² (207 km²).

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 808 ft (246 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--9 years, 2.53 ft³/s (0.072 m³/s), 1,840 acre-ft/yr (2.27 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 940 ft³/s (26.6 m³/s) Apr. 20, 1979, gage height, 9.3 ft (2.83 m); maximum gage height, 14.64 ft (4.462 m) Apr. 19, 1979, backwater from ice; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40 ft³/s (1.13 m³/s) Mar. 30, gage height, 8.92 ft (2.719 m), backwater from ice, only peak above base of 25 ft³/s (0.71 m³/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR UCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	UCT	NUV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	12	.00	.00	.00	.00	.05
2	.00	.00	.00	.00	.00	.00	10	.00	.00	.00	.00	.03
3	.00	.00	.00	.00	.00	.00	8.5	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	3.0	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	2.5	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	3.5	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	3.0	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	2.0	.00	.00	.00	.00	.19
9	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00	.46
10	.00	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00	.28
11	.00	.00	.00	.00	.00	.00	.75	.00	.00	.00	.00	.10
12	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00	.05	.24
13	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00	.08	.50
14	.00	.00	.00	.00	.00	.00	.45	.00	.00	.00	.01	.50
15	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.46
16	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00	.24
17	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	.13	.13
18	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.21	.13
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.21	.24
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.32
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.24	.58
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19	1.0
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.21	.98
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.24	.93
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.21	.62
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.46
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.46
28	.00	.00	.00	.00	.00	1.0	.00	.00	.41	.00	.01	.42
29	.00	.00	.00	.00	.00	13	.00	.00	.00	.00	.13	.32
30	.00	.00	.00	.00	---	20	.00	.00	.00	.00	.21	.24
31	.00	---	.00	.00	---	15	---	.00	---	.00	.10	---
TOTAL	.00	.00	.00	.00	.00	49.00	50.37	.00	.41	.00	2.45	9.88
MEAN	.000	.000	.000	.000	.000	1.58	1.68	.000	.014	.000	.079	.33
MAX	.00	.00	.00	.00	.00	20	12	.00	.41	.00	.24	1.0
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	97	100	.00	.8	.00	4.9	20

CAL YR 1979 TOTAL 3858.68 MEAN 10.6 MAX 934 MIN .00 AC-FT 7650
WTR YR 1980 TUTAL 112.11 MEAN .31 MAX 20 MIN .00 AC-FT 222

05098700 HIDDEN ISLAND COULEE NEAR HANSBORO, ND
(International gaging station)

LOCATION.—Lat 48°57'10", long 99°25'35", in SE¼SW¼ sec.11, T.163 N., R.68 W., Towner County, Hydrologic Unit 09020313, on right bank 400 ft (122 m) downstream from bridge on county highway, and 2.5 mi (4.0 km) west of Hansboro.

DRAINAGE AREA.—38 mi^2 (98 km^2), approximately.

PERIOD OF RECORD.—October 1961 to current year.

GAGE.—Water-stage recorder. Altitude of gage is 1,615 ft (492 m), from topographic map. Prior to May 20, 1962, nonrecording gage 400 ft (122 m) upstream at same datum.

REMARKS.—Records fair.

COOPERATION.—This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.—19 years, 3.87 ft^3/s (0.110 m^3/s), 2,800 acre-ft/yr (3.45 hm^3/yr); median of yearly mean discharges, 2.8 ft^3/s (0.079 m^3/s), 2,030 acre-ft/yr (2.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, about 1,200 ft^3/s (34.0 m^3/s) Apr. 23, 1979, gage height, 10.50 ft (3.200 m), from floodmark, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 90 ft^3/s (2.55 m^3/s) Apr. 3, gage height, 7.51 ft (2.289 m), backwater from ice, only peak above base of 25 ft^3/s (0.71 m^3/s); no flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	.03
3	.00	.00	.00	.00	.00	.00	10	.09	.00	.00	.00	.05
4	.00	.00	.00	.00	.00	.00	58	.08	.00	.00	.00	.05
5	.00	.00	.00	.00	.00	.00	30	.07	.00	.00	.00	.02
6	.00	.00	.00	.00	.00	.00	16	.05	.00	.00	.00	.01
7	.00	.00	.00	.00	.00	.00	10	.05	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	6.1	.04	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	9.1	.04	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	7.0	.03	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	6.0	.02	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	6.3	.02	.00	.00	.00	.01
13	.00	.00	.00	.00	.00	.00	6.0	.02	.00	.00	.00	.12
14	.00	.00	.00	.00	.00	.00	5.7	.01	.00	.00	.00	.33
15	.00	.00	.00	.00	.00	.00	5.1	.01	.00	.00	.00	.18
16	.00	.00	.00	.00	.00	.00	4.5	.00	.00	.00	.00	.14
17	.00	.00	.00	.00	.00	.00	2.4	.00	.00	.00	.00	.12
18	.00	.00	.00	.00	.00	.00	2.0	.00	.00	.00	.00	.10
19	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.14
20	.00	.00	.00	.00	.00	.00	.46	.00	.00	.00	.02	.23
21	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	1.3
22	.00	.00	.00	.00	.00	.00	.35	.00	.00	.00	.00	5.1
23	.00	.00	.00	.00	.00	.00	.19	.00	.00	.00	.00	5.3
24	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.06	4.5
25	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.06	3.7
26	.00	.00	.00	.00	.00	.00	.15	.00	.00	.00	.02	3.2
27	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	2.6
28	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	2.1
29	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	1.6
30	.00	.00	.00	.00	---	.00	.12	.00	.00	.00	.00	1.0
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	187.64	.74	.00	.00	.16	31.93
MEAN	.000	.000	.000	.000	.000	.000	6.25	.024	.000	.000	.005	1.06
MAX	.00	.00	.00	.00	.00	.00	58	.11	.00	.00	.06	5.3
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	372	1.5	.00	.00	.3	63

CAL YR 1979 TOTAL 3269.84 MEAN 8.96 MAX 1000 MIN .00 AC-FT 6490
WTR YR 1980 TOTAL 220.47 MEAN .60 MAX 58 MIN .00 AC-FT 437

05098800 CYPRESS CREEK NEAR SARLES, ND
(International gaging station)

LOCATION.--Lat 48°56'35", long 98°57'05", in SW¼SE¼ sec.9, T.163 N., R.64 W., Cavalier County, Hydrologic Unit 09020313, on right bank 150 ft (46 m) downstream from twin multiplate culverts on county highway, and 2.5 mi (4.0 km) east of Sarles.

DRAINAGE AREA.--71 mi² (184 km²), approximately.

PERIOD OF RECORD.--May 1961 to current year. Prior to October 1973, published as Long River near Sarles.

GAGE.--Water-stage recorder. Altitude of gage is 1,545 ft (471 m), from topographic map.

REMARKS.--Records good.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--19 years, 6.40 ft³/s (0.181 m³/s), 4,640 acre-ft/yr (5.72 hm³/yr); median of yearly mean discharges, 4.9 ft³/s (0.14 m³/s), 3,600 acre-ft/yr (4.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 2,000 ft³/s (56.6 m³/s) Apr. 21, 1979, gage height, 10.35 ft (3.155 m), backwater from ice and snow; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 85 ft³/s (2.41 m³/s) Apr. 5, gage height, 4.05 ft (1.234 m), only peak above base of 50 ft³/s (1.42 m³/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.50	.11	.00	.06	.01	.01
2	.00	.00	.00	.00	.00	.00	1.4	.10	.00	.05	.01	.01
3	.00	.00	.00	.00	.00	.00	2.8	.09	.00	.04	.01	.01
4	.00	.00	.00	.00	.00	.00	8.8	.08	.00	.03	.02	.01
5	.00	.00	.00	.00	.00	.00	60	.07	.00	.03	.03	.01
6	.00	.00	.00	.00	.00	.00	52	.05	.00	.02	.03	.01
7	.00	.00	.00	.00	.00	.00	35	.03	.00	.02	.02	.01
8	.00	.00	.00	.00	.00	.00	22	.02	.00	.20	.01	.01
9	.00	.00	.00	.00	.00	.00	17	.01	.00	.40	.01	.00
10	.00	.00	.00	.00	.00	.00	14	.01	.00	.25	.01	.00
11	.00	.00	.00	.00	.00	.00	11	.00	.00	.15	.01	.00
12	.00	.00	.00	.00	.00	.00	7.1	.00	.00	.10	.01	.00
13	.00	.00	.00	.00	.00	.00	5.1	.00	.00	.08	.01	.00
14	.00	.00	.00	.00	.00	.00	4.4	.00	.00	.06	.01	.00
15	.00	.00	.00	.00	.00	.00	4.1	.00	.50	.05	.01	.00
16	.00	.00	.00	.00	.00	.00	3.5	.00	1.5	.15	.01	.00
17	.00	.00	.00	.00	.00	.00	2.0	.00	.90	.20	.01	.00
18	.00	.00	.00	.00	.00	.00	1.2	.00	.60	.50	.01	.00
19	.00	.00	.00	.00	.00	.00	.81	.00	.40	.30	.01	.00
20	.00	.00	.00	.00	.00	.00	.60	.00	.50	.25	.05	.00
21	.00	.00	.00	.00	.00	.00	.45	.00	.25	.25	.15	.01
22	.00	.00	.00	.00	.00	.00	.35	.00	.20	.20	.25	.01
23	.00	.00	.00	.00	.00	.00	.28	.00	.15	.15	.20	.01
24	.00	.00	.00	.00	.00	.00	.22	.00	.12	.10	.15	.01
25	.00	.00	.00	.00	.00	.00	.18	.00	.10	.08	.10	.01
26	.00	.00	.00	.00	.00	.00	.16	.00	.08	.06	.07	.01
27	.00	.00	.00	.00	.00	.00	.15	.00	.20	.05	.04	.01
28	.00	.00	.00	.00	.00	.00	.14	.00	.25	.04	.02	.01
29	.00	.00	.00	.00	.00	.00	.13	.00	.15	.03	.01	.02
30	.00	.00	.00	.00	---	.00	.12	.00	.08	.02	.01	.02
31	.00	---	.00	.00	---	.00	---	.00	---	.01	.01	---
TOTAL	.00	.00	.00	.00	.00	.00	255.49	.57	5.78	3.93	1.31	.20
MEAN	.000	.000	.000	.000	.000	.000	8.52	.018	.19	.13	.042	.007
MAX	.00	.00	.00	.00	.00	.00	60	.11	1.5	.50	.25	.02
MIN	.00	.00	.00	.00	.00	.00	.12	.00	.00	.01	.01	.00
AC-FT	.00	.00	.00	.00	.00	.00	507	1.1	11	7.8	2.6	.4

CAL YR 1979 TOTAL 3567.56 MEAN 9.77 MAX 800 MIN .00 AC-FT 7080
WTR YR 1980 TOTAL 267.28 MEAN .73 MAX 60 MIN .00 AC-FT 530

05099100 SNOWFLAKE CREEK NEAR SNOWFLAKE, MAN
(International gaging station)

LOCATION.--Lat 49°01'17", long 98°36'13", in SW¼ sec.10, T.1, R.9 W., 1st meridian, at traffic bridge, 2.5 mi (4.0 km) east, and 1.5 mi (2.4 km) south of Snowflake.

DRAINAGE AREA.--348 mi^2 (901 km^2).

PERIOD OF RECORD.--March 1961 to current year.

GAGE.--Water-stage recorder since March 1968 and nonrecording gage prior thereto. Datum of gage is 1,221.66 ft (372.362 m), Geodetic Survey of Canada datum. Prior to Apr. 2, 1964, nonrecording gage at present site and datum. Apr. 2, 1964, to May 10, 1965, nonrecording gage at site 0.5 mi (0.8 km) downstream at present datum.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.--19 years, 17.8 ft^3/s (0.504 m^3/s), 12,900 acre-ft/yr (15.9 hm^3/yr); median of yearly mean discharges, 12 ft^3/s (0.34 m^3/s), 8,700 acre-ft/yr (11 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,130 ft^3/s (32.0 m^3/s) Apr. 21, 1979, gage height, 8.28 ft (2.524 m); no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 67 ft^3/s (1.89 m^3/s) Apr. 5, gage height, 4.05 ft (1.233 m), backwater from ice; maximum gage height, 4.17 ft (1.271 m) Mar. 30, backwater from ice; no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	.11	.06	.00	.00	.00	13	6.5	.88	.00	.00	.00
2	.15	.13	.06	.00	.00	.00	16	6.0	.42	.00	.00	.00
3	.12	.11	.03	.00	.00	.00	16	5.6	.11	.00	.00	.00
4	.10	.06	.04	.00	.00	.00	20	5.2	.04	.00	.00	.00
5	.07	.13	.04	.00	.00	.00	43	4.7	.04	.00	.00	.00
6	.06	.15	.06	.00	.00	.00	33	3.9	.00	.00	.00	.00
7	.06	.13	.06	.00	.00	.00	18	3.2	.00	.00	.00	.00
8	.06	.15	.03	.00	.00	.00	8.9	2.4	.00	.00	.00	.00
9	.05	.11	.02	.00	.00	.00	11	2.3	.00	.00	.00	.00
10	.05	.11	.01	.00	.00	.00	7.1	2.7	.00	.00	.00	.11
11	.06	.08	.01	.00	.00	.00	5.5	2.2	.00	.00	.00	.16
12	.04	.06	.01	.00	.00	.00	4.7	1.5	.00	.00	.00	.38
13	.03	.08	.00	.00	.00	.00	4.1	1.3	.00	.00	.00	.37
14	.03	.11	.00	.00	.00	.00	4.3	1.5	.00	.00	.00	.14
15	.03	.15	.00	.00	.00	.00	4.3	1.3	.00	.00	.00	.06
16	.03	.15	.00	.00	.00	.00	12	1.2	.00	.00	.00	.02
17	.02	.15	.00	.00	.00	.00	13	1.3	.00	.00	.00	.01
18	.03	.13	.00	.00	.00	.00	13	1.1	.00	.00	.00	.02
19	.04	.11	.00	.00	.00	.00	14	1.0	.00	.00	.00	.09
20	.09	.08	.00	.00	.00	.00	18	.60	.00	.00	.00	.17
21	.12	.06	.00	.00	.00	.00	16	.18	.00	.00	.03	.24
22	.07	.04	.00	.00	.00	.00	14	.07	.00	.00	.00	.59
23	.06	.02	.00	.00	.00	.00	11	.00	.00	.00	.00	.23
24	.05	.01	.00	.00	.00	.00	11	.00	.00	.00	.00	.14
25	.04	.01	.00	.00	.00	.00	10	.00	.00	.00	.00	.10
26	.05	.01	.00	.00	.00	.00	9.1	.00	.00	.00	.00	.06
27	.08	.01	.00	.00	.00	.00	8.7	.00	.00	.00	.00	.03
28	.06	.01	.00	.00	.00	.00	7.9	.00	.04	.00	.00	.03
29	.06	.01	.00	.00	.00	1.4	7.4	1.9	.00	.00	.00	.57
30	.06	.02	.00	.00	---	.99	7.0	3.6	.00	.00	.00	2.5
31	.08	---	.00	.00	---	2.6	---	1.8	---	.00	.00	---
TOTAL	2.09	2.49	.43	.00	.00	4.99	383.0	63.05	1.53	.00	.03	6.02
MEAN	.067	.083	.014	.000	.000	.16	12.8	2.03	.051	.000	.001	.20
MAX	.24	.15	.06	.00	.00	2.6	43	6.5	.88	.00	.03	2.5
MIN	.02	.01	.00	.00	.00	.00	4.1	.00	.00	.00	.00	.00
AC-FT	4.1	4.9	.9	.00	.00	9.9	760	125	3.0	.00	.06	12

CAL YR 1979 TOTAL 21274.03 MEAN 58.3 MAX 1130 MIN .00 AC-FT 42200
WTR YR 1980 TOTAL 463.63 MEAN 1.27 MAX 43 MIN .00 AC-FT 920

05099150 MOWBRAY CREEK NEAR MOWBRAY, MAN

LOCATION.--Lat 49°00'00", long 98°27'15", in SE¼ sec.3, T.1, R.8 W., 1st meridian, on downstream side of bridge on Municipal Road on international boundary, and 1.5 mi (2.4 km) east of Mowbray.

DRAINAGE AREA.--93.9 mi² (243.2 km²).

PERIOD OF RECORD.--March to October, 1962 to current year.

GAGE.--Water-stage recorder operated March 1 to October 31 each year. Nonrecording gage prior to 1971.

COOPERATION.--Records furnished by Water Survey of Canada.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 777 ft³/s (22.0 m³/s) Apr. 24, 1979, gage height, 7.02 ft (2.140 m); maximum gage height, 7.88 ft (2.402 m) Mar. 29, 1966, backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 310 ft³/s (8.77 m³/s) May 29, gage height, 6.29 ft (1.917 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9					.00	3.5	.23	17	3.1	1.1	1.5
2	9.3					.00	4.5	.22	12	2.9	1.1	1.6
3	8.9					.00	4.7	.24	9.8	2.6	1.3	1.6
4	8.8					.00	4.9	.23	13	2.3	2.3	1.6
5	8.1					.00	64	.20	8.7	2.0	2.0	1.7
6	7.3					.00	53	.15	6.9	1.8	1.7	1.7
7	6.5					.00	28	.12	2.5	1.5	1.8	1.8
8	5.9					.00	26	.07	1.7	1.2	1.8	1.8
9	5.2					.00	29	.04	1.0	1.4	1.8	1.8
10	4.9					.00	32	.00	.46	1.4	1.9	1.7
11	4.8					.00	29	.00	.26	.94	1.9	1.5
12	4.5					.00	26	.00	.16	.53	2.2	1.6
13	4.2					.00	26	.00	.00	.33	1.8	1.8
14	4.1					.00	24	.00	.00	.04	1.8	1.6
15	4.1					.00	19	.00	.00	.04	1.7	1.5
16	4.1					.00	16	.00	.00	.48	1.7	1.4
17	4.1					.00	13	.00	.00	.48	2.0	1.3
18	4.0					.00	9.9	.00	.00	.60	1.9	1.4
19	3.8					.00	7.5	.00	.00	1.0	1.7	1.5
20	3.7					.00	6.0	.00	.00	1.2	1.7	2.2
21	3.2					.00	4.8	.00	.00	1.2	1.8	1.7
22	2.8					.00	3.4	.00	.00	.95	1.6	2.4
23	2.7					.00	2.6	.00	1.8	.88	1.5	2.1
24	2.6					.00	2.1	.00	4.5	.80	1.4	2.2
25	2.3					.00	1.7	.00	5.1	.63	1.4	2.0
26	2.3					.00	1.3	.00	4.5	.53	1.4	4.0
27	2.2					.00	1.0	.00	4.2	.55	1.3	2.7
28	2.1					.00	.79	31	4.0	.68	1.4	3.3
29	1.9					.01	.51	150	3.7	.81	1.5	4.2
30	1.8					1.6	.30	40	3.4	1.2	1.5	3.8
31	1.7					2.4	---	22	---	1.2	1.5	---
TOTAL	141.8					4.01	444.50	244.50	104.68	35.27	51.5	61.0
MEAN	4.57					.13	14.8	7.89	3.49	1.14	1.66	2.03
MAX	9.9					2.4	64	150	17	3.1	2.3	4.2
MIN	1.7					.00	.30	.00	.00	.04	1.1	1.3
AC-FT	281					8.0	882	485	208	70	102	121

05099300 PEMBINA RIVER NEAR WINDYGATES, MAN
(International gaging station)

LOCATION.--Lat 49°01'53", long 98°16'40", in SE¼ sec.13, T.1, R.7 W., 1st meridian, on left bank 0.2 mi (0.3 km) downstream from bridge, and 3 mi (5 km) northeast of Windygates.

DRAINAGE AREA.--3,020 mi² (7,820 km²).

PERIOD OF RECORD.--April 1962 to current year.

GAGE.--Water-stage recorder and nonrecording gage. Datum of recording gage is 1,102.02 ft (335.896 m). Datum of nonrecording gage is 1,105.00 ft (336.804 m), both gages referred to Geodetic Survey of Canada datum.

REMARKS.--Records fair.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.--18 years, 241 ft³/s (6.825 m³/s) 174,600 acre-ft/yr (215 hm³/yr); median of yearly mean discharges, 167 ft³/s (4.73 m³/s), 121,000 acre-ft/yr (149 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s (326 m³/s) Apr. 26, 1974, gage height, 19.50 ft (5.944 m); no flow in some years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 327 ft³/s (9.26 m³/s) Apr. 6, backwater from ice; maximum gage height observed, 5.53 ft (1.686 m) Apr. 3; minimum daily discharge, 0.35 ft³/s (0.010 m³/s) Jan. 26, 27, Feb. 20 to Mar. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	35	14	6.4	.85	.35	53	102	71	4.0	.85	1.6
2	43	36	13	6.1	.95	.35	106	99	60	3.5	.85	1.6
3	42	36	13	5.6	1.0	.35	174	96	51	3.1	.85	1.5
4	42	35	12	5.0	1.1	.35	197	93	44	2.8	.78	1.4
5	42	35	12	4.3	1.1	.35	219	90	39	2.4	.78	1.3
6	41	36	11	3.5	1.1	.39	327	87	39	2.3	.78	1.2
7	41	39	11	2.7	1.1	.39	310	84	36	2.0	.78	1.1
8	41	36	11	2.3	1.1	.39	220	82	34	1.8	.85	1.0
9	41	32	10	2.0	1.0	.39	130	80	31	1.7	.95	1.0
10	40	36	10	1.8	.95	.42	158	78	28	1.6	.95	.95
11	40	36	10	1.7	.85	.42	185	76	25	1.5	1.0	.85
12	40	35	9.9	1.6	.78	.42	164	75	22	1.3	1.1	.85
13	40	32	9.7	1.4	.71	.46	151	73	20	1.3	1.1	.78
14	40	30	9.6	1.3	.64	.53	139	71	18	1.2	1.1	.71
15	39	30	9.3	1.2	.57	.57	119	70	17	1.2	1.1	.64
16	39	30	9.2	1.1	.53	.60	115	68	16	1.1	1.1	.57
17	39	30	9.0	1.1	.49	.67	114	67	15	1.1	1.1	.46
18	38	30	8.9	.99	.42	.71	123	65	14	1.1	1.6	.39
19	38	29	8.6	.92	.39	.74	130	63	13	1.0	2.0	.46
20	38	29	8.5	.85	.35	.78	128	62	12	1.0	2.3	.64
21	38	26	8.3	.78	.35	.81	135	60	11	1.0	2.4	.78
22	38	24	8.2	.71	.35	.85	137	59	9.9	1.0	2.3	.95
23	37	22	7.9	.64	.35	.92	134	57	9.3	1.0	2.2	1.0
24	37	20	7.8	.53	.35	.99	126	56	8.3	1.0	2.1	1.0
25	37	19	7.6	.42	.35	1.1	123	55	7.7	1.0	2.0	1.0
26	37	18	7.5	.35	.35	1.1	119	54	7.0	1.0	2.0	1.1
27	37	17	7.2	.35	.35	1.3	115	53	6.3	1.0	1.9	1.1
28	37	16	7.1	.42	.35	1.5	112	97	5.7	1.0	1.8	1.2
29	37	16	6.9	.49	.35	2.3	108	122	5.3	.95	1.8	1.2
30	37	15	6.7	.64	---	3.5	105	106	4.8	.95	1.7	1.3
31	36	---	6.5	.78	---	18	---	82	---	.95	1.7	---
TOTAL	1216	860	291.4	57.97	19.13	42.00	4476	2382	680.3	47.85	43.82	29.63
MEAN	39.2	28.7	9.40	1.87	.66	1.35	149	76.8	22.7	1.54	1.41	.99
MAX	44	39	14	6.4	1.1	18	327	122	71	4.0	2.4	1.6
MIN	36	15	6.5	.35	.35	.35	53	53	4.8	.95	.78	.39
AC-FT	2410	1710	578	115	38	83	8880	4720	1350	95	87	59

CAL YR 1979 TOTAL 165227.13 MEAN 453 MAX 5350 MIN .07 AC-FT 327700
WTR YR 1980 TOTAL 10146.10 MEAN 27.7 MAX 327 MIN .35 AC-FT 20120

05099400 LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, ND

LOCATION.--Lat 48°51'55", long 98°00'20", in SW¼ sec.10, T.162 N., R.57 W., Cavalier County, Hydrologic Unit 09020313, on right bank 25 ft (8 m) upstream from county bridge, 3.5 mi (5.6 km) above mouth, and 6 mi (10 km) southwest of Walhalla.

DRAINAGE AREA.--182 mi² (471 km²), of which 10 mi² (26 km²) is noncontributing.

PERIOD OF RECORD.--April 1956 to current year. Prior to October 1973, published as Little Pembina River near Walhalla.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,099.48 ft (335.122 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 10, 1956, nonrecording gage at bridge 25 ft (8 m) downstream at same datum.

REMARKS.--Records are fair. Flow regulated since March 1971 by Mt. Carmel Reservoir, 30 mi (48 km) upstream, capacity, 4,200 acre-ft (5.18 hm³).

AVERAGE DISCHARGE.--24 years, 22.6 ft³/s (0.640 m³/s), 16,370 acre-ft/yr (20.2 hm³/yr); median of yearly mean discharges, 19 ft³/s (0.54 m³/s), 13,800 acre-ft/yr (17 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,600 ft³/s (187 m³/s) Apr. 25, 1970, gage height, 13.95 ft (4.252 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum observed discharge, 140 ft³/s (3.965 m³/s) Mar. 31, gage height, 6.21 ft (1.893 m), from floodmark; minimum daily, 0.02 ft³/s (<0.001 m³/s) July 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	1.3	1.0	.37	.23	.22	124	3.4	2.6	2.5	.32	.95
2	4.6	1.3	.88	.37	.23	.22	120	3.3	1.9	2.2	.37	.82
3	4.0	1.2	.70	.32	.22	.22	115	3.1	1.6	2.1	.32	.82
4	3.6	1.1	.64	.32	.22	.22	75	2.8	1.3	2.1	1.0	.95
5	2.6	1.1	.82	.32	.22	.22	68	2.6	1.2	2.2	.82	.88
6	2.1	.98	.58	.32	.22	.22	64	2.5	1.1	2.2	.58	.76
7	1.8	.98	.42	.32	.22	.22	60	2.5	.88	.95	.58	.76
8	1.6	.98	.52	.28	.22	.22	51	2.5	.82	.28	.58	.95
9	1.6	1.1	.76	.28	.22	.22	42	2.3	.90	.16	.58	.88
10	1.5	1.1	.70	.28	.22	.22	35	2.3	.82	.05	.58	.82
11	1.5	1.1	.70	.28	.22	.22	28	2.2	.82	.03	.58	.76
12	1.5	1.1	.70	.28	.22	.22	21	2.1	.82	.02	.88	3.6
13	1.4	1.1	.70	.28	.22	.22	15	2.1	.82	.03	1.1	4.6
14	1.3	1.1	.76	.28	.22	.22	16	2.1	1.1	.10	.70	1.7
15	1.3	1.1	.76	.28	.22	.26	17	2.1	.82	.11	.58	1.2
16	1.3	1.1	.76	.28	.22	.30	13	1.8	.82	3.8	.70	1.1
17	1.3	1.1	.70	.28	.22	.34	12	1.7	.70	6.2	24	1.3
18	1.3	1.1	.58	.28	.22	.38	11	1.7	1.1	5.6	4.3	2.2
19	1.4	.98	.47	.28	.22	.42	11	1.7	.82	5.6	1.5	4.3
20	1.3	.82	.47	.28	.22	.46	10	1.5	.70	5.9	1.8	7.2
21	1.3	.69	.47	.25	.22	.50	8.6	1.4	.58	25	5.6	5.9
22	1.3	.76	.42	.25	.22	.54	7.2	1.4	.47	2.2	2.3	26
23	1.2	.76	.42	.25	.22	.58	6.2	1.3	.42	.88	1.6	19
24	1.0	.82	.42	.25	.22	.62	6.8	1.2	.37	.70	1.2	20
25	1.0	.82	.42	.25	.22	.66	5.9	1.2	.28	.58	1.0	14
26	1.0	.98	.42	.25	.22	.68	5.3	1.2	.42	.58	.95	9.0
27	1.1	.98	.42	.23	.22	5.0	5.1	1.3	.82	.70	.88	6.2
28	1.0	.95	.37	.23	.22	20	4.6	9.9	1.9	.47	1.1	4.3
29	1.0	1.0	.37	.23	.22	50	4.0	18	2.9	.47	1.5	3.1
30	1.0	1.0	.37	.23	---	80	3.8	6.2	2.8	.42	1.2	3.1
31	1.2	---	.37	.23	---	140	---	4.3	---	.32	1.0	---
TOTAL	52.9	30.50	18.09	8.63	6.40	303.82	965.5	93.7	32.60	74.45	60.20	147.15
MEAN	1.71	1.02	.58	.28	.22	9.80	32.2	3.02	1.09	2.40	1.94	4.91
MAX	4.6	1.3	1.0	.37	.23	140	124	18	2.9	25	24	26
MIN	1.0	.69	.37	.23	.22	.22	3.8	1.2	.28	.02	.32	.76
AC-FT	105	60	36	17	13	603	1920	186	65	148	119	292

CAL YR 1979 TOTAL 16370.77 MEAN 44.9 MAX 2080 MIN .20 AC-FT 32470
WTR YR 1980 TOTAL 1793.94 MEAN 4.90 MAX 140 MIN .02 AC-FT 3560

05099600 PEMBINA RIVER AT WALHALLA, ND

LOCATION.--Lat 48°54'50", long 97°55'00", in NE¼NE¼ sec.29, T.163 N., R.56 W., Pembina County, Hydrologic Unit 09020313, on left bank at downstream side of bridge on State Highway 32, at south edge of Walhalla, and 7 mi (11 km) downstream from Little South Pembina River.

DRAINAGE AREA.--3,350 mi² (8,680 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1963, published as "near Walhalla."

REVISED RECORDS.--WSP 1388: 1943, 1950(P). WSP 1558: 1957. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 934 ft (284.7 m), from topographic map. Prior to Nov. 10, 1943, nonrecording gage and Nov. 10, 1943, to Sept. 30, 1963, water-stage recorder at site 5.5 mi (8.8 km) upstream at different datum.

REMARKS.--Records good except those for the winter period, which are fair.

AVERAGE DISCHARGE.--41 years, 243 ft³/s (6.882 m³/s), 176,100 acre-ft/yr (217 hm³/yr); median of yearly mean discharges, 170 ft³/s (4.81 m³/s), 123,000 acre-ft/yr (150 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,400 ft³/s (578 m³/s) Apr. 18, 1950, gage height, 19.2 ft (5.85 m) former site and datum, 16.2 ft (4.938 m) present site and datum, from rating curve extended above 7,000 ft³/s (198 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 400 ft³/s (11.3 m³/s), from graph based on gage readings, only peak above base of 400 ft³/s (11.3 m³/s); maximum gage height, 4.46 ft (1.359 m) Apr. 1, backwater from ice; minimum daily discharge, 3.2 ft³/s (0.091 m³/s) Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	34	18	5.8	4.0	4.6	265	113	78	9.0	3.5	3.8
2	43	30	18	5.8	4.0	4.6	308	109	60	9.4	3.2	4.0
3	42	30	18	5.8	4.0	4.6	242	106	51	9.0	3.5	4.0
4	41	29	18	5.8	4.2	4.7	268	106	42	8.6	5.4	3.8
5	39	28	18	5.6	4.2	4.7	308	100	40	7.8	4.8	3.8
6	38	27	18	5.6	4.2	4.7	362	96	38	7.0	4.8	3.5
7	37	26	17	5.4	4.2	4.7	355	92	36	7.0	4.8	3.8
8	37	25	17	5.4	4.2	4.7	276	92	33	7.0	4.5	3.5
9	37	24	20	5.4	4.2	4.7	218	91	30	5.7	4.5	3.8
10	37	23	20	5.2	4.2	4.7	238	89	26	5.4	4.5	4.0
11	38	22	18	5.2	4.2	4.7	252	86	24	5.1	4.5	4.2
12	36	22	16	5.2	4.2	4.7	238	83	22	4.5	6.4	6.0
13	34	22	15	5.0	4.4	4.7	248	79	20	3.8	7.0	8.2
14	34	22	12	5.0	4.4	4.7	186	78	20	3.5	7.4	8.2
15	34	20	10	4.8	4.4	4.7	168	76	18	3.5	5.7	7.0
16	34	20	8.0	4.8	4.4	4.7	156	70	18	6.7	5.1	5.7
17	33	21	7.0	4.8	4.4	4.7	146	66	16	5.4	14	5.4
18	32	23	6.0	4.6	4.4	4.8	142	62	14	5.1	15	5.4
19	32	22	6.0	4.6	4.6	4.8	146	59	14	4.8	10	7.0
20	31	20	6.0	4.2	4.6	4.8	154	56	13	6.0	7.4	9.0
21	31	20	6.0	4.2	4.6	4.8	154	54	12	19	14	9.4
22	31	20	6.0	4.2	4.6	4.9	152	51	10	11	12	13
23	31	20	6.0	4.2	4.6	4.9	144	48	9.4	8.6	6.7	16
24	31	20	6.0	4.2	4.6	4.9	138	46	9.0	6.7	7.4	16
25	31	20	6.0	4.2	4.6	4.9	136	43	7.4	5.1	6.4	15
26	31	20	6.0	4.2	4.6	4.9	138	42	7.0	4.5	5.1	12
27	31	20	6.0	4.2	4.6	4.9	136	41	7.4	5.1	4.2	11
28	31	19	6.0	4.0	4.6	5.7	128	39	8.6	5.1	4.0	9.9
29	31	19	6.0	3.8	4.6	10	122	81	8.6	4.5	3.8	9.4
30	31	19	6.0	3.8	---	25	115	88	8.6	3.5	3.8	8.6
31	32	---	6.0	3.8	---	150	---	97	---	3.5	4.0	---
TOTAL	1074	687	352.0	148.8	126.8	318.9	6039	2339	701.0	200.9	197.4	224.4
MEAN	34.6	22.9	11.4	4.80	4.37	10.3	201	75.5	23.4	6.48	6.37	7.48
MAX	43	34	20	5.8	4.6	150	362	113	78	19	15	16
MIN	31	19	6.0	3.8	4.0	4.6	115	39	7.0	3.5	3.2	3.5
AC-FT	2130	1360	698	295	252	633	11980	4640	1390	398	392	445

CAL YR 1979 TOTAL 198596.6 MEAN 544 MAX 8610 MIN 3.0 AC-FT 393900
WTR YR 1980 TOTAL 12409.2 MEAN 33.9 MAX 362 MIN 3.2 AC-FT 24610

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1962 to September 1972, October 1974 to current year.
WATER TEMPERATURES: April 1962 to September 1972, October 1974 to current year.

INSTRUMENTATION.--Water-quality monitor since August 1976. Once-daily observer readings are supplemented by continuous monitor records during high flow periods.

REMARKS.--No continuous monitor record available for the water year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,290 micromhos Feb. 17, 1972; minimum daily, 223 micromhos Apr. 9, 1971.
WATER TEMPERATURES: Maximum recorded, 31.5°C July 20, 1979; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,100 micromhos Jan. 14-19; minimum observed, 440 micromhos Apr. 1.
WATER TEMPERATURES: Maximum observed, 23.5°C Sept. 7; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) (00310)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)
OCT											
23...	1340	29	820	8.4	6.5	10	5.5	--	--	2.3	K4
NOV											
27...	1425	20	1100	8.1	.0	10	6.5	13.0	92	.6	120
DEC											
19...	1355	5.7	1010	7.9	.0	10	32	9.8	69	1.0	<1
JAN											
29...	1440	3.8	949	7.8	.5	60	74	8.2	56	.4	K450
FEB											
26...	1450	4.5	881	7.7	.5	1	3.8	10.2	71	.4	2200
MAR											
05...	1245	E4.7	940	7.7	.5	2	45	9.4	67	--	K16
13...	1020	4.7	902	7.7	.0	30	45	11.6	83	--	K31
19...	1055	E4.8	912	7.9	.0	5	60	10.8	79	--	K36
26...	0905	4.9	886	7.9	1.0	5	66	11.7	85	.7	K230
31...	1435	214	452	--	.5	--	--	--	--	--	--
APR											
02...	1235	282	432	7.8	1.5	80	170	--	--	--	--
08...	0840	280	508	8.0	.5	60	160	12.6	90	--	K8900
15...	1345	161	654	8.2	10.0	30	110	10.0	92	--	K31
22...	1340	156	650	8.8	16.5	30	80	10.0	105	--	K110
29...	1355	122	820	8.5	19.5	30	27	8.7	98	5.0	K10
MAY											
07...	1010	E94	879	8.4	7.0	20	22	10.4	86	--	26
13...	0910	78	782	8.5	8.0	30	13	10.5	92	--	K40
19...	1630	E60	842	8.4	22.0	--	--	9.2	110	--	K1900
28...	1115	40	860	8.5	23.0	20	8.8	8.2	102	--	>8000
JUN											
04...	1410	45	872	8.5	22.5	40	76	8.7	105	3.8	>8000
10...	1135	27	852	8.4	22.0	20	21	8.9	106	--	>8000
18...	1750	E13	870	8.3	24.5	20	23	8.7	104	--	K13000
25...	1050	9.9	856	8.2	21.0	30	15	8.4	98	--	K21000
JUL											
08...	1335	7.2	823	8.3	28.0	10	14	9.0	103	2.6	K14000
AUG											
06...	0910	4.8	768	8.2	17.0	5	31	9.2	99	2.9	K20000
SEP											
09...	1420	3.8	839	8.1	20.0	5	7.0	9.6	109	3.8	8000

E - Estimated.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
OCT											
23...	K4	K14	350	98	85	33	52	24	1.2	61	8.6
NOV											
27...	K2	K5	--	--	--	--	--	--	--	--	--
DEC											
19...	K3	K10	450	100	120	37	47	18	1.0	55	7.8
JAN											
29...	K10	K2	440	74	120	35	40	16	.8	46	6.4
FEB											
26...	K33	K20	370	140	100	28	29	15	.7	34	4.6
MAR											
05...	K15	K8	440	100	120	34	37	15	.8	43	6.1
13...	K2	K6	460	150	130	34	35	14	.7	41	5.9
19...	67	42	440	130	120	33	34	14	.7	40	5.8
26...	<1	83	410	110	110	32	33	15	.7	39	5.6
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	--	--	140	49	37	11	29	30	1.1	38	8.8
08...	K160	K1800	180	71	46	16	35	29	1.1	43	7.5
15...	K43	K60	230	89	57	21	43	28	1.2	51	8.3
22...	150	60	240	83	61	22	48	29	1.3	56	8.2
29...	K5	23	320	94	77	32	55	26	1.3	65	10
MAY											
07...	61	42	310	78	74	30	51	26	1.3	61	9.7
13...	33	35	310	77	72	31	48	25	1.2	57	8.9
19...	K7	K26	330	86	76	33	51	25	1.2	61	9.5
28...	59	54	330	87	75	34	54	26	1.3	65	11
JUN											
04...	400	360	290	66	70	27	50	27	1.3	60	10
10...	180	170	330	67	78	32	56	26	1.3	67	11
18...	62	72	350	93	87	33	52	24	1.2	63	11
25...	150	63	360	87	90	32	46	21	1.1	56	9.6
JUL											
08...	88	81	350	130	87	31	47	22	1.1	57	10
AUG											
06...	210	220	330	100	89	27	32	17	.8	39	7.1
SEP											
09...	100	37	370	120	97	30	36	17	.8	43	7.4

DATE	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)
OCT											
23...	250	--	200	15	.3	16	582	561	.79	45.6	.09
NOV											
27...	310	--	220	17	.3	--	684	--	.93	36.9	.01
DEC											
19...	350	--	200	15	.4	23	669	662	.91	10.3	.18
JAN											
29...	370	--	170	11	.3	23	634	630	.86	6.50	.18
FEB											
26...	230	--	170	12	.3	21	569	505	.77	6.99	.21
MAR											
05...	340	--	170	12	.3	23	628	608	.85	--	.21
13...	310	--	160	57	.3	23	610	633	.83	7.74	.25
19...	310	--	170	10	.3	23	585	584	.80	--	.21
26...	300	--	170	12	.3	21	532	566	.72	7.04	.19
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	89	--	110	9.4	.1	14	299	273	.41	228	1.8
08...	110	--	120	11	.2	.1	333	307	.45	252	1.1
15...	140	--	170	11	.2	18	434	417	.59	189	.81
22...	160	.5	180	13	.3	16	443	445	.60	187	.00
29...	230	--	180	14	.3	21	560	528	.76	184	.02
MAY											
07...	230	--	170	14	.3	22	523	510	.71	--	.01
13...	230	--	160	30	.3	20	530	509	.72	112	.02
19...	240	--	180	14	.3	21	--	529	.72	--	.02
28...	240	--	190	15	.3	23	580	547	.79	62.6	.02
JUN											
04...	220	--	170	12	.2	24	514	496	.70	62.5	.02
10...	260	--	190	15	.4	23	566	562	.77	41.3	.01
18...	260	--	180	15	.3	26	595	561	.81	--	.00
25...	270	--	190	15	.3	26	--	572	.78	15.3	.00
JUL											
08...	220	--	190	14	.0	25	573	537	.78	11.1	.06
AUG											
06...	230	--	150	11	.5	22	513	477	.70	6.65	.00
SEP											
09...	250	--	160	11	.3	22	554	514	.75	5.68	.00

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITROGEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)
OCT											
23...	.08	.35	.02	.00	.00	.11	.08	.10	.05	.12	.06
NOV											
27...	.01	.04	.01	.01	.03	.02	.02	.01	.00	.01	.00
DEC											
19...	.19	.84	.02	.00	.03	.20	.20	.02	.02	.02	.03
JAN											
29...	.20	.89	.04	.01	.03	.22	.21	.10	.09	.12	.12
FEB											
26...	.18	.80	.01	.01	.03	.22	.19	.12	.12	.15	.15
MAR											
05...	.21	.93	.01	.01	.03	.22	.22	.12	.12	.15	.15
13...	.22	.97	.03	.00	.03	.28	.23	.20	.13	.24	.17
19...	.22	.97	.01	.01	.03	.22	.23	.12	.15	.15	.19
26...	.20	.89	.01	.01	.03	.20	.21	.15	.13	.18	.17
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	1.8	8.0	.07	.09	.30	1.9	1.9	.07	.04	.08	.05
08...	1.1	4.7	.04	.04	.13	1.1	1.1	.00	.00	.00	.00
15...	.88	<3.9	.05	.03	.10	.86	.91	.29	.08	.35	.10
22...	.02	<.09	.01	.01	.03	.01	.03	.02	.04	.02	.05
29...	.06	<.27	.00	.00	.00	.02	.06	.03	.01	.04	.01
MAY											
07...	.03	<.13	.00	.00	.00	.01	.03	.04	.09	.05	.12
13...	.02	<.09	.01	.01	.03	.03	.03	.04	.04	.05	.05
19...	.03	.13	.01	.01	.03	.03	.04	.03	.01	.04	.01
28...	.02	<.09	.01	.00	.00	.03	.02	.03	.03	.04	.04
JUN											
04...	.05	<.22	.02	.01	.03	.04	.06	.15	.01	.18	.01
10...	.01	<.04	.01	.01	.03	.02	.02	.13	.01	.16	.01
18...	.01	<.04	.02	.01	.03	.02	.02	.09	.07	.11	.09
25...	.02	<.09	.01	.01	.03	.00	.03	.00	.00	.00	.00
JUL											
08...	.06	<.27	.00	.00	.00	.06	.06	.09	.01	.11	.01
AUG											
06...	.00	<.00	.00	.00	.00	.00	.00	.05	.00	.06	.00
SEP											
09...	.00	.00	.00	.00	.00	.00	.00	.03	.00	.04	.00

DATE	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS PO4) (00650)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)
OCT										
23...	.65	.62	.75	.08	.67	.86	3.8	.090	.15	.28
NOV										
27...	1.4	.55	1.4	.85	.55	1.4	6.3	.080	.25	.25
DEC										
19...	.56	.56	.58	.00	.58	.78	3.5	.100	.15	.31
JAN										
29...	.06	.07	.16	.00	.16	.38	1.7	.070	.18	.21
FEB										
26...	.42	.24	.54	.18	.36	.76	3.4	.130	.12	.40
MAR										
05...	.56	.25	.68	.31	.37	.90	4.0	.090	.21	.28
13...	.21	.28	.41	.00	.41	.69	3.1	.120	.34	.37
19...	.62	.34	.74	.25	.49	.96	4.3	.140	.21	.43
26...	.41	.24	.56	.19	.37	.76	3.4	.130	.21	.40
31...	--	--	--	--	--	--	--	--	--	--
APR										
02...	2.9	1.9	3.0	1.1	1.9	4.9	22	.760	1.2	2.3
08...	1.9	1.9	1.9	.00	1.9	3.0	13	.570	.89	1.7
15...	1.5	.63	1.8	1.1	.71	2.7	12	.410	.71	1.3
22...	1.7	.53	1.7	1.1	.57	1.7	7.6	.250	.12	.77
29...	1.4	1.1	1.4	.30	1.1	1.4	6.3	.250	.21	.77
MAY										
07...	1.5	1.1	1.5	.30	1.2	1.5	6.7	.220	.34	.67
13...	1.2	.68	1.2	.48	.72	1.2	5.4	.190	.49	.58
19...	1.1	.72	1.1	.37	.73	1.1	5.0	.190	.28	.58
28...	1.3	.47	1.3	.80	.50	1.3	5.9	.140	.25	.43
JUN										
04...	1.5	1.3	1.6	.30	1.3	1.6	7.3	.270	.25	.83
10...	1.1	.80	1.2	.39	.81	1.2	5.4	.150	.37	.46
18...	.85	.79	.94	.08	.86	.96	4.3	.100	.25	.31
25...	--	--	--	--	--	--	--	.190	.06	.58
JUL										
08...	.57	.56	.66	.09	.57	.72	3.2	.010	.06	.03
AUG										
06...	.69	.55	.74	.19	.55	.74	3.3	.090	.03	.28
SEP										
09...	.38	.40	.41	.01	.40	.41	1.8	.050	.06	.15

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DISSOL. (MG/L AS P) (00672)	PHOS-PHORUS, HYDRO. + ORTHO TOTAL (MG/L AS P) (00678)	PHOS-PHORUS, HYDRO. + ORTHO DISSOL. (MG/L AS P) (00677)	PHOS-PHORUS, ORGANIC TOTAL (MG/L AS P) (00670)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P) (00673)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)
OCT											
23...	.110	.05	.09	.28	.04	.00	.09	.07	.00	.04	--
NOV											
27...	.060	.08	.06	.18	.00	.01	.08	.07	.00	.00	--
DEC											
19...	.050	.05	.04	.12	--	--	--	--	--	--	--
JAN											
29...	.010	.06	.04	.12	.08	.00	.14	.04	.00	.00	--
FEB											
26...	.020	.04	.03	.09	.11	.01	.15	.04	.00	.00	--
MAR											
05...	.040	.07	.05	.15	--	.12	--	.17	--	.00	--
13...	.050	.11	.05	.15	.00	.00	.11	.05	.01	.00	--
19...	.050	.07	.07	.21	.07	.00	.14	.05	.00	.00	--
26...	.050	.07	.05	.15	.07	.00	.14	.05	.00	.00	--
APR											
02...	.470	.39	.34	1.0	.48	.08	.87	.42	.00	.05	4000
08...	.270	.29	.24	.74	.28	.00	.57	.23	.00	.04	--
15...	.190	.23	.18	.55	.14	.03	.37	.21	.04	.00	--
22...	.060	.04	.07	.21	--	--	--	--	--	--	--
29...	.110	.07	.07	.21	.17	.03	.24	.10	.01	.01	--
MAY											
07...	.140	.11	.13	.40	--	--	--	--	--	--	--
13...	.140	.16	.10	.31	.05	.05	.21	.15	.00	.00	--
19...	.180	.09	.08	.25	--	--	--	--	--	--	--
28...	.080	.08	.08	.25	.04	.01	.12	.09	.02	.00	--
JUN											
04...	.120	.08	.07	.21	.20	.05	.28	.12	.00	.00	--
10...	.080	.12	.10	.31	--	--	--	--	--	--	--
18...	.080	.08	.05	.15	--	--	--	--	--	--	--
25...	.070	.02	.05	.15	.04	.01	.06	.06	.13	.01	--
JUL											
08...	.040	.02	.03	.09	--	--	--	--	--	--	--
AUG											
06...	.050	.01	.02	.06	.06	.00	.07	.02	.02	.03	--
SEP											
09...	.030	.02	.01	.03	.03	.04	.05	.05	.00	.00	40

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	BORON, SUS-PENDED RECOV-ERABLE (UG/L AS B) (01021)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)
OCT											
23...	--	--	--	--	--	--	--	--	--	150	--
NOV											
27...	--	--	--	--	--	--	--	--	--	120	--
DEC											
19...	--	--	--	--	--	--	--	--	--	130	--
JAN											
29...	--	--	--	--	--	--	--	--	--	110	--
FEB											
26...	--	--	--	--	--	--	--	--	--	90	--
MAR											
05...	--	--	--	--	--	--	--	--	--	110	--
13...	--	--	--	--	--	--	--	--	--	100	--
19...	--	--	--	--	--	--	--	--	--	110	--
26...	--	--	--	--	--	--	--	--	--	100	--
APR											
02...	5	3	2	100	30	70	0	120	10	110	2
08...	--	--	--	--	--	--	--	--	--	100	--
15...	--	--	--	--	--	--	--	--	--	120	--
22...	--	--	--	--	--	--	--	--	--	120	--
29...	--	--	--	--	--	--	--	--	--	150	--
MAY											
07...	--	--	--	--	--	--	--	--	--	140	--
13...	--	--	--	--	--	--	--	--	--	150	--
19...	--	--	--	--	--	--	--	--	--	160	--
28...	--	--	--	--	--	--	--	--	--	180	--
JUN											
04...	--	--	--	--	--	--	--	--	--	160	--
10...	--	--	--	--	--	--	--	--	--	170	--
18...	--	--	--	--	--	--	--	--	--	160	--
25...	--	--	--	--	--	--	--	--	--	170	--
JUL											
08...	--	--	--	--	--	--	--	--	--	120	--
AUG											
06...	--	--	--	--	--	--	--	--	--	190	--
SEP											
09...	--	--	--	--	--	--	0	110	10	100	--

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
APR											
02...	1	1	10	10	0	6	3	<3	17	10	7
08...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
OCT											
23...	140	130	<10	--	--	--	--	160	40	120	--
NOV											
27...	400	--	--	--	--	--	--	250	--	--	--
DEC											
19...	1210	1200	<10	--	--	--	--	620	60	560	--
JAN											
29...	2900	2900	10	--	--	--	--	800	110	690	--
FEB											
26...	3300	3300	<10	--	--	--	--	820	210	610	--
MAR											
05...	2100	2100	<10	--	--	--	--	660	120	540	--
13...	2000	2000	<10	--	--	--	--	680	40	640	--
19...	2900	2900	<10	--	--	--	--	750	150	600	--
26...	2600	2600	<10	--	--	--	--	710	170	540	--
APR											
02...	7200	7000	160	10	10	0	30	940	830	110	2.7
08...	630	560	70	--	--	--	--	900	840	60	--
15...	4400	4400	30	--	--	--	--	520	470	50	--
22...	4800	4800	50	--	--	--	--	1000	980	20	--
29...	1200	1200	20	--	--	--	--	380	370	10	--
MAY											
07...	930	920	<10	--	--	--	--	310	270	40	--
13...	630	620	<10	--	--	--	--	200	160	40	--
19...	--	--	<10	--	--	--	--	--	--	--	--
28...	500	490	<10	--	--	--	--	200	140	60	--
JUN											
04...	2600	2600	10	--	--	--	--	330	290	40	--
10...	1300	1300	10	--	--	--	--	190	110	80	--
18...	630	620	<10	--	--	--	--	230	90	140	--
25...	550	540	<10	--	--	--	--	280	100	180	--
JUL											
08...	730	720	<10	--	--	--	--	290	140	150	--
AUG											
06...	1100	1100	<10	--	--	--	--	440	220	220	--
SEP											
09...	320	310	<10	--	--	--	70	390	80	310	--

DATE	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
APR										
02...	2.4	.3	3	100	3	2	1	0	0	0
08...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)
OCT											
23...	--	--	--	10	.2	--	--	--	--	--	--
NOV											
27...	--	--	--	17	.2	--	--	--	--	--	--
DEC											
19...	--	--	--	12	.6	--	--	0	--	--	.0
JAN											
29...	--	--	--	7.4	.6	--	--	--	--	--	--
FEB											
26...	--	--	--	5.9	.9	--	--	--	--	--	--
MAR											
05...	--	--	--	4.8	1.0	--	--	--	--	--	--
13...	--	--	--	6.0	.4	--	--	--	--	--	--
19...	--	--	--	7.8	.3	--	--	--	--	--	--
26...	--	--	--	7.4	.6	--	.0	0	.00	.00	.0
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	70	40	30	17	3.6	.00	.0	0	.00	.00	.0
08...	--	--	--	11	1.9	--	--	--	--	--	--
15...	--	--	--	15	1.1	--	--	--	--	--	--
22...	--	--	--	8.1	1.5	--	--	--	--	--	--
29...	--	--	--	15	1.0	--	--	--	--	--	--
MAY											
07...	--	--	--	11	1.5	--	--	--	--	--	--
13...	--	--	--	14	.6	--	--	--	--	--	--
19...	--	--	--	7.7	1.8	--	--	--	--	--	--
28...	--	--	--	17	.5	--	--	--	--	--	--
JUN											
04...	--	--	--	13	1.2	--	.0	0	.00	.00	.0
10...	--	--	--	14	2.2	--	--	--	--	--	--
18...	--	--	--	9.5	.8	--	--	--	--	--	--
25...	--	--	--	8.5	.3	--	--	--	--	--	--
JUL											
08...	--	--	--	9.6	.4	--	--	--	--	--	--
AUG											
06...	--	--	--	6.7	.5	--	--	--	--	--	--
SEP											
09...	--	--	--	11	.3	.00	.0	0	.00	.00	.0

DATE	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DI-ELDRIN TOTAL (UG/L) (39380)
OCT											
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
27...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	--	0	--	.0	--	.0	--	.0	--	.0	--
JAN											
29...	--	--	--	--	--	--	--	--	--	--	--
FEB											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
05...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
26...	.0	0	.00	.1	.00	.0	.00	.5	.00	.0	.00
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	.0	0	.00	.0	.00	.0	.00	.0	.00	.0	.00
08...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	.0	0	.00	.0	.00	.0	.00	.1	.00	.0	.00
10...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	.0	0	.00	.0	.00	.0	.00	.0	.00	.0	.00

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	TOTAL TRI-THION (UG/L) (39786)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)
OCT											
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
27...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	.0	--	--	.0	--	.0	--	.0	--	.0	--
JAN											
29...	--	--	--	--	--	--	--	--	--	--	--
FEB											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
05...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
26...	.0	.00	.00	.0	.00	.0	.00	.0	.00	.0	.00
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	.0	.00	.00	.0	.00	.0	.00	.0	.00	.0	.00
08...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	.0	.00	.00	.0	.00	.0	.00	.0	.00	.0	.00
10...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	.0	.00	.00	.0	.00	.0	.00	.0	.00	.0	.00

DATE	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39343)	MALA-THION, TOTAL (UG/L) (39530)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39531)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRI-THION, TOTAL (UG/L) (39790)	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG) (39791)
OCT											
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
27...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	.0	--	.0	--	.0	--	.2	--	.0	--	.0
JAN											
29...	--	--	--	--	--	--	--	--	--	--	--
FEB											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
05...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
26...	.0	.00	.0	.00	.0	.00	.1	.00	.0	.00	.0
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00	.0
08...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00	.0
10...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00	.0

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MIREX, TOTAL (UG/L) (39755)	PARA- THION, TOTAL (UG/L) (39540)	PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39541)	PER- THANE TOTAL (UG/L) (39034)	TOX- APHENE, TOTAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)	2,4-D, TOTAL (UG/L) (39730)	2,4-D, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39731)	2,4,5-T TOTAL (UG/L) (39740)	2,4,5-T TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39741)	SILVEX, TOTAL (UG/L) (39760)
OCT											
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
27...	--	--	--	--	--	--	--	--	--	--	--
DEC											
19...	--	--	.0	--	--	0	--	0	--	0	--
JAN											
29...	--	--	--	--	--	--	--	--	--	--	--
FEB											
26...	--	--	--	--	--	--	--	--	--	--	--
MAR											
05...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
26...	.00	.00	.0	.00	0	0	.00	0	.00	0	.00
31...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	.00	.00	.0	.00	0	0	.16	0	.00	0	.00
08...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	.00	.00	.0	.00	0	0	--	0	.00	0	.00
10...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	.00	.00	.0	.00	0	0	.00	0	.00	0	.00

DATE	SILVEX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39761)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML) (60050)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	LENGTH OF EXPO- SURE (DAYS) (00022)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)
OCT											
23...	--	1800	--	--	--	--	--	--	--	--	--
NOV											
27...	--	4900	.080	.080	34	.000	.000	16	.86	--	--
DEC											
19...	.0	--	--	--	--	--	--	--	--	--	--
JAN											
29...	--	--	--	--	--	--	--	147	1.5	--	--
FEB											
26...	--	--	--	--	--	--	--	308	3.8	--	--
MAR											
05...	--	--	--	--	--	--	--	210	--	--	--
13...	--	--	--	--	--	--	--	186	2.4	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
26...	.0	2800	.160	.160	31	.080	.000	--	--	--	--
31...	--	--	--	--	--	--	--	733	424	--	--
APR											
02...	.0	12000	--	--	--	--	--	656	499	47	67
08...	--	--	--	--	--	--	--	474	358	66	84
15...	--	--	--	--	--	--	--	225	98	67	86
22...	--	--	--	--	--	--	--	218	92	--	--
29...	--	67000	.866	.866	14	.100	.000	90	30	--	--
MAY											
07...	--	--	--	--	--	--	--	58	--	--	--
13...	--	--	--	--	--	--	--	43	9.1	--	--
19...	--	--	--	--	--	--	--	75	--	--	--
28...	--	--	--	--	--	--	--	38	4.1	--	--
JUN											
04...	.0	38000	1.02	.709	28	.230	.000	--	--	--	--
10...	--	--	--	--	--	--	--	74	5.4	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	--	3300	60.6	55.0	35	29.7	2.13	38	.74	--	--
AUG											
06...	--	1900	10.0	9.06	31	3.96	.340	114	1.5	--	--
SEP											
09...	.0	1000	--	--	35	--	--	--	--	--	--

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)
APR									
02...	90	98	100	--	--	--	1	3	8
08...	91	94	97	99	100	--	0	1	4
15...	93	94	96	98	98	100	0	1	4
22...	--	--	--	--	--	--	1	1	4
29...	--	--	--	--	--	--	0	1	3
MAY									
07...	--	--	--	--	--	--	1	2	4
13...	--	--	--	--	--	--	0	1	3
19...	--	--	--	--	--	--	0	0	2
28...	--	--	--	--	--	--	0	0	1
JUN									
10...	--	--	--	--	--	--	0	0	1
JUL									
08...	--	--	--	--	--	--	0	0	1

DATE	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
APR								
02...	26	47	61	70	82	93	100	--
08...	32	56	77	89	96	99	99	100
15...	36	65	83	93	98	100	--	--
22...	36	69	86	94	98	99	100	--
29...	39	70	86	94	98	99	100	--
MAY								
07...	45	79	91	97	99	100	--	--
13...	45	86	96	98	99	100	--	--
19...	42	87	96	99	100	--	--	--
28...	40	89	98	100	--	--	--	--
JUN								
10...	27	87	98	100	--	--	--	--
JUL								
08...	22	41	55	63	84	100	--	--

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	875	960	1020	925	850	440	---	700	---	810	875
2	850	900	960	1020	---	810	480	---	650	---	---	875
3	850	900	960	1050	900	---	505	810	700	---	---	860
4	840	900	960	1040	850	---	550	800	750	---	---	810
5	840	900	---	1040	875	875	550	780	800	---	---	825
6	---	910	960	1020	875	860	540	---	800	825	---	825
7	850	910	960	1020	850	860	540	790	850	830	---	810
8	850	---	960	1030	825	860	520	780	850	---	---	815
9	850	940	960	1040	875	870	550	790	850	---	---	805
10	850	---	960	1040	875	890	600	800	850	830	760	790
11	850	940	960	1030	850	900	610	---	850	830	750	800
12	830	950	975	1030	850	900	610	---	860	830	730	715
13	825	950	980	1050	850	900	620	---	860	840	---	810
14	830	950	990	1100	825	890	640	825	860	850	---	810
15	850	950	990	1100	825	890	660	825	850	830	---	825
16	---	950	990	1100	---	890	690	825	860	790	---	850
17	860	---	990	1100	825	860	700	---	875	790	715	840
18	850	900	990	1100	825	875	---	---	860	770	830	820
19	850	900	990	1100	880	880	---	---	875	780	790	780
20	850	---	1000	1050	850	870	---	860	875	780	815	800
21	---	---	1000	1050	850	860	---	860	880	730	900	880
22	---	950	1000	1050	850	860	---	875	---	790	900	900
23	---	950	1000	950	850	890	---	875	875	690	900	930
24	---	950	---	950	860	890	---	875	870	740	900	960
25	---	950	---	925	860	875	---	875	870	760	890	960
26	---	960	---	925	860	875	---	880	---	770	890	980
27	850	960	---	925	860	---	---	880	870	---	890	960
28	850	960	1000	925	870	---	---	880	825	790	---	960
29	850	970	1010	925	870	---	---	750	---	790	880	960
30	850	960	1010	---	---	850	---	810	---	800	875	940
31	850	---	1010	950	---	675	---	700	---	810	875	---
MEAN	847	933	982	1020	858	866	577	825	831	793	839	859

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.5	.0	.0	.0	.0	1.0	---	16.0	---	15.0	13.0
2	9.0	.5	.0	.0	---	.0	.0	---	14.0	---	---	12.0
3	9.0	1.5	.0	.0	.0	---	.0	18.0	17.0	---	---	15.0
4	6.0	1.5	.0	.0	.0	---	1.0	18.5	17.0	---	---	13.0
5	6.0	1.0	---	.0	.0	.0	1.0	14.0	17.0	---	---	13.0
6	---	1.0	.0	.0	.0	.0	.5	---	17.0	19.0	---	13.0
7	7.0	1.0	.0	.0	.0	.0	.0	13.0	12.0	19.0	---	23.5
8	7.0	---	.0	.0	.0	.0	.0	13.0	13.0	---	---	18.0
9	6.5	.0	.0	.0	.0	.0	.0	11.0	15.0	---	---	10.0
10	6.5	---	.0	.0	.0	.0	.0	10.0	16.0	20.0	15.0	11.0
11	7.0	.0	.0	.0	.0	.0	1.0	---	18.0	21.0	13.5	11.0
12	4.5	.0	.0	.0	.0	.0	.5	---	18.0	21.0	16.5	14.0
13	2.0	.0	.0	1.0	.0	.0	2.0	---	18.0	21.0	---	14.0
14	2.0	.0	.0	.0	.0	.0	2.5	8.0	17.0	20.0	---	14.0
15	6.0	.0	.0	.0	.0	.0	4.0	8.5	15.0	18.0	---	10.0
16	---	.0	.0	.0	---	.0	6.0	8.5	15.0	19.0	---	8.0
17	4.5	---	.0	.0	.0	.0	7.0	---	17.0	19.0	15.0	9.0
18	4.5	3.0	.0	.0	.0	.0	---	---	15.0	18.0	14.0	6.5
19	4.5	1.0	.0	.0	.0	.0	---	---	15.0	18.0	18.5	9.0
20	7.0	---	.0	.0	.0	.0	---	15.0	16.5	16.0	20.0	8.5
21	---	---	.0	.0	.0	.0	---	17.0	20.0	17.0	19.0	6.0
22	---	1.0	.0	.0	.0	.0	---	18.5	---	18.0	18.0	8.0
23	---	.0	.0	.0	.0	1.0	---	19.0	19.0	19.5	18.0	8.0
24	---	.0	---	.0	.0	.0	---	18.5	19.0	20.0	19.0	7.0
25	---	.0	---	.0	.0	.0	---	21.0	17.0	15.0	19.0	6.5
26	---	.0	---	.0	.0	.0	---	20.0	---	16.0	17.0	7.0
27	6.0	.0	---	.0	.0	---	---	19.0	14.5	---	16.0	10.0
28	5.0	.0	.0	.0	.0	---	---	19.0	15.0	17.0	---	11.0
29	5.0	.0	.0	.0	.0	---	---	17.0	---	17.0	13.0	13.0
30	4.0	.0	.0	---	---	.0	---	17.5	---	17.0	15.0	13.0
31	3.0	---	.0	.0	---	.0	---	16.0	---	16.5	13.0	---
MEAN	5.5	.5	.0	.0	.0	.0	1.5	15.5	16.5	18.5	16.5	11.0

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 23,79	NOV 27,79	MAR 26,80	APR 2,80	APR 29,80
TIME	1340	1425	0905	1235	1355
TOTAL CELLS/ML	1800	4900	2800	12000	67000
DIVERSITY: DIVISION	0.8	0.2	0.5	0.4	1.4
.CLASS	0.8	0.2	0.6	0.4	1.4
..ORDER	1.4	0.4	0.8	0.5	1.5
...FAMILY	1.5	0.4	0.8	0.6	1.5
....GENUS	1.6	0.4	1.3	0.6	1.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	29	1	--	-	--	-
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	16	1	46	1	100	4	--	-	4300	6
....CHLORELLA	--	-	92	2	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	58	2	--	-	--	-
....TETRAEDRUN	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....SCENEDESMUS	62	3	--	-	29	1	--	-	860	1
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	62	3	--	-	--	-	--	-	430	1
....CHLOROGONIUM	--	-	--	-	--	-	--	-	--	-
...PHACOTACEAE										
....PTEROMONAS	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	1400#	75	4600#	94	14	1	290	2	--	-
....MELOSIRA	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	14	1	--	-	26000#	39
..PENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	--	-	--	-	140	1	--	-
...CYMBELLACEAE										
....EPITHEMIA	--	-	--	-	--	-	--	-	--	-
....RHOPALODIA	--	-	140	3	--	-	--	-	--	-
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....CALONEIS	--	-	--	-	--	-	140	1	--	-
....GYROSIGMA	16	1	--	-	--	-	--	-	--	-
....NAVICULA	47	3	--	-	--	-	140	1	--	-
...NITZSCHIACEAE										
....NITZSCHIA	120	7	--	-	14	1	290	2	860	1
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....KEPHYRIOPSIS	--	-	--	-	14	1	--	-	--	-
.XANTHOPHYCEAE										
..HETEROCOCCALES										
...CHLOROTHECIACEAE										
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	31	2	--	-	--	-	--	-	430	1
...CRYPTOMONADACEAE										
....CRYPTOMONAS	47	3	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	OCT 23,79 1340		NOV 27,79 1425		MAR 26,80 0905		APR 2,80 1235		APR 29,80 1355	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	62	3	--	-	87	3	--	-	34000#	51
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES										
...OSCILLATORIACEAE										
....LYNGBYA	--	-	--	-	170	6	--	-	--	-
....OSCILLATORIA	--	-	--	-	2200#	80	11000#	92	--	-
....SPIRULINA	--	-	--	-	14	1	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-

NOTES: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUN 4,80	JUL 8,80	AUG 6,80	SEP 9,80
TIME	1410	1335	0910	1420
TOTAL CELLS/ML	38000	3300	1900	1000
DIVERSITY: DIVISION	1.6	1.4	1.7	1.8
.CLASS	1.6	1.4	1.8	1.8
..ORDER	2.0	2.2	2.4	2.4
...FAMILY	2.5	2.5	2.9	2.8
....GENUS	2.9	2.9	3.4	2.9

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	270	1	--	-	13	1	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	39	2	--	-
....MICRACTINIUM	2100	6	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	1600	4	280	8	210	11	52	5
....CHLORELLA	--	-	31	1	--	-	--	-
....CHODATELLA	--	-	31	1	13	1	13	1
....DICTYOSPHAERIUM	1600	4	--	-	52	3	--	-
....KIRCHNERIELLA	530	1	--	-	--	-	--	-
....OOCYSTIS	270	1	120	4	13	1	--	-
....TETRAEDRON	--	-	--	-	--	-	13	1
....TREUBARIA	--	-	61	2	--	-	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	1900	5	61	2	78	4	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	800	2	400	12	560#	29	360#	35
....CHLOROGONIUM	--	-	--	-	--	-	13	1
...PHACOTACEAE								
....PTEROMONAS	--	-	--	-	--	-	26	3
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	15000#	39	1400#	43	26	1	170#	16
....MELOSIRA	1300	4	--	-	26	1	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	--	-
...CYMBELLACEAE								
....EPITHEMIA	270	1	--	-	--	-	--	-
....RHOPALODIA	--	-	--	-	--	-	--	-
...DIATOMACEAE								
....DIATOMA	270	1	--	-	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	--	-	120	4	26	1	--	-
...NAVICULACEAE								
....CALONEIS	--	-	--	-	--	-	--	-
....GYROSIGMA	--	-	--	-	13	1	--	-
....NAVICULA	--	-	31	1	91	5	65	6
...NITZSCHIACEAE								
....NITZSCHIA	2900	8	370	11	270	14	140	14
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....KEPHYRIOPSIS	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE								
..HETEROCOCCALES								
...CHLOROTHECIACEAE								
....OPHIOCYTIUM	--	-	--	-	26	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	800	2	180	6	--	-	52	5
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	120	4	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	JUN 4,80 1410		JUL 8,80 1335		AUG 6,80 0910		SEP 9,80 1420	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	260	13	--	-
....ANACYSTIS	7400#	20	--	-	120	6	52	5
....COCCOCHLORIS	1100	3	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-
....SPIRULINA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	31	1	13	1	--	-
....TRACHELOMONAS	--	-	61	2	78	4	52	5
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	13	1	13	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05100000 PEMBINA RIVER AT NECHE, ND
(International gaging station)

LOCATION.--Lat 48°59'20", long 97°33'05", in SE¼NW¼ sec.31, T.164 N., R.53 W., Pembina County, Hydrologic Unit 09020313, on right bank 0.3 mi (0.5 km) east of State Highway 18, and at north edge of Neche.

DRAINAGE AREA.--3,410 mi² (8,830 km²), approximately.

PERIOD OF RECORD.--May 1903 to September 1908, June 1909 to September 1915, April 1919 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1904-8, 1910-15, 1920, 1921, 1923, 1924. WSP 1388: 1904(M), 1914, 1915(M), 1931(M), 1933, 1938(M). WSP 1728: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 809.69 ft (246.794 m) National Geodetic Vertical Datum of 1929. Prior to May 24, 1932, nonrecording gage at Burlington Northern Railway bridge 1 mi (2 km) upstream, at same datum. May 25, 1932, to Apr. 17, 1939, nonrecording gage on bridge on State Highway 18, 500 ft (150 m) downstream from railway bridge, at same datum.

REMARKS.--Records good except those for the winter period, which are fair.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--72 years (1903-8, 1909-15, 1919-80), 195 ft³/s (5.522 m³/s), 141,300 acre-ft/yr (174 hm³/yr); median of yearly mean discharges, 142 ft³/s (4.02 m³/s), 102,900 acre-ft/yr (127 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft³/s (303 m³/s) Apr. 20, 1950, gage height, 21.58 ft (6.578 m), backwater from ice; from rating curve extended above 5,300 ft³/s (150 m³/s); maximum gage height, 23.64 ft (7.205 m) Apr. 20, 1979, backwater from ice; no flow at times each year 1932-41, 1953, 1960-62.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 435 ft³/s (12.3 m³/s) Apr. 7, gage height, 8.85 ft (2.697 m), only peak above base of 400 ft³/s (11.3 m³/s); minimum daily discharge, 5.0 ft³/s (0.14 m³/s) Feb. 2-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	41	18	7.8	5.2	5.2	30	138	86	16	8.1	10
2	52	41	18	7.8	5.0	5.2	30	138	94	15	8.1	10
3	52	41	18	7.6	5.0	5.2	173	132	86	15	6.4	12
4	52	41	18	7.6	5.0	5.2	238	126	74	14	7.2	13
5	50	39	18	7.4	5.0	5.2	286	121	65	13	9.0	12
6	50	34	18	7.4	5.0	5.2	330	112	58	13	9.0	12
7	50	23	18	7.2	5.0	5.2	429	104	50	13	10	9.4
8	50	18	17	7.2	5.0	5.2	429	102	46	13	10	9.4
9	48	23	17	7.0	5.0	5.2	363	102	43	11	9.0	8.3
10	48	27	17	7.0	5.0	5.2	274	102	43	9.0	9.0	8.3
11	46	27	17	6.8	5.0	5.2	234	99	39	9.0	9.0	7.2
12	45	27	20	6.8	5.0	5.2	242	94	37	8.1	9.0	9.4
13	45	27	20	6.6	5.0	5.2	238	92	34	6.4	9.0	9.4
14	45	27	15	6.6	5.0	5.2	234	92	32	6.4	9.0	13
15	45	27	15	6.4	5.0	5.2	211	92	31	6.4	9.0	15
16	45	27	15	6.4	5.0	5.2	204	89	31	9.0	9.0	15
17	45	27	15	6.2	5.0	5.4	193	86	27	11	19	15
18	45	31	10	6.2	5.0	5.4	182	82	23	11	14	12
19	45	32	9.0	6.0	5.0	5.4	171	77	23	10	7.2	12
20	45	32	8.0	6.0	5.0	5.4	168	70	21	9.0	18	10
21	45	32	8.0	6.0	5.0	5.6	168	68	20	9.0	21	13
22	45	27	8.0	5.9	5.1	5.6	168	61	19	9.0	18	15
23	43	20	8.0	5.9	5.1	5.6	161	56	17	13	17	16
24	43	19	8.0	5.8	5.1	5.6	148	50	16	19	17	16
25	43	19	8.0	5.8	5.1	5.6	145	48	14	15	17	17
26	41	19	8.0	5.6	5.1	5.6	138	45	11	13	14	17
27	41	19	8.0	5.6	5.1	5.6	138	45	11	13	13	18
28	41	19	8.0	5.4	5.1	5.6	142	41	16	11	10	18
29	41	19	8.0	5.4	5.1	6.0	142	41	16	10	10	17
30	41	19	8.0	5.2	---	10	142	41	16	9.0	10	17
31	41	---	8.0	5.2	---	15	---	68	---	9.0	10	---
TOTAL	1420	824	409.0	199.8	146.0	180.6	6151	2614	1099	348.3	355.0	386.4
MEAN	45.8	27.5	13.2	6.45	5.03	5.83	205	84.3	36.6	11.2	11.5	12.9
MAX	52	41	20	7.8	5.2	15	429	138	94	19	21	18
MIN	41	18	8.0	5.2	5.0	5.2	30	41	11	6.4	6.4	7.2
AC-FT	2820	1630	811	396	290	358	12200	5180	2180	691	704	766

CAL YR 1979 TOTAL 203836.5 MEAN 558 MAX 9300 MIN 3.0 AC-FT 404300
WTR YR 1980 TOTAL 14133.1 MEAN 38.6 MAX 429 MIN 5.0 AC-FT 28030

05101000 TONGUE RIVER AT AKRA, ND

LOCATION.--Lat 48°46'42", long 97°44'43", in SW¼ sec.10, T.161 N., R.55 W., Pembina County, Hydrologic Unit 09020313, on left bank 300 ft (90 m) downstream from Renwick Dam, 0.9 mi (1.4 km) northwest of Akra, and 6 mi (10 km) west of Cavalier.

DRAINAGE AREA.--160 mi^2 (414 km^2).

PERIOD OF RECORD.--April to June 1950 (WSP 1137-B), October 1951 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 930.00 ft (283.464 m) National Geodetic Vertical Datum of 1929. Prior to July 10, 1954, nonrecording gage 1.2 mi (1.9 km) downstream at datum 30.00 ft (9.144 m) lower. July 23, 1954 to Dec. 19, 1973, water stage recorder 2.7 mi (4.3 km) downstream at datum 9.10 ft (2.774 m) lower.

REMARKS.--Records poor. Flow regulated by temporary retention in ten retarding basins beginning 300 ft (90 m) above station, four of which have slow release outlet structures to regulate the flow. Retarding basins were completed during the period 1955 to 1961 and have a combined capacity of 19,245 acre-ft (23.7 hm^3).

AVERAGE DISCHARGE.--29 years (water years 1952-80), 21.6 ft^3/s (0.612 m^3/s), 15,650 acre-ft/yr (19.3 hm^3/yr); median of yearly mean discharges, 19 ft^3/s (0.54 m^3/s), 13,800 acre-ft/yr (17 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 ft^3/s (334 m^3/s) Apr. 18, 1950, gage height, 48.7 ft (14.844 m), from floodmarks, site and datum then in use, from rating curve extended above 1,500 ft^3/s (42.5 m^3/s) on basis of contracted-opening measurement of peak flow; no flow Dec. 1-27, 1952, Aug. 13, 14, 1961.

This flood is the highest known since settlement of the region in about 1860.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 180 ft^3/s (5.10 m^3/s) Apr. 6, gage height, 11.86 ft (3.615 m), from floodmark; minimum daily, 0.09 ft^3/s (0.003 m^3/s) July 5-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	7.3	5.0	4.8	4.0	4.6	1.5	8.8	1.9	.14	2.0	14
2	6.0	7.0	5.0	4.8	4.0	4.6	1.5	8.5	2.4	.12	2.0	12
3	4.9	7.0	5.1	4.8	4.0	4.6	1.4	8.0	2.5	.12	2.2	13
4	4.8	6.9	5.2	4.8	4.0	4.6	21	7.5	2.0	.10	2.4	13
5	4.5	6.4	5.2	4.8	4.0	4.6	106	7.1	2.1	.09	2.6	12
6	4.0	5.9	5.0	4.8	4.0	5.0	160	6.5	2.0	.09	2.7	13
7	3.0	5.8	5.0	4.8	4.0	10	163	1.0	1.6	.09	2.8	13
8	2.8	5.5	5.0	4.8	4.0	16	133	.14	1.1	.09	3.5	15
9	2.6	5.0	5.0	4.8	4.0	16	74	.10	.75	.09	4.0	17
10	2.6	4.8	5.0	4.8	4.0	16	53	.10	.56	.09	5.0	18
11	2.6	4.5	5.0	4.8	4.0	16	41	.10	.46	.09	6.0	18
12	3.2	4.2	5.0	4.8	4.0	16	33	.10	.33	.10	7.5	20
13	4.0	4.2	4.9	4.8	4.2	16	27	.12	.26	.10	8.0	26
14	4.8	4.1	4.8	4.9	4.2	16	23	.12	.26	.10	8.4	28
15	5.2	4.1	4.8	5.0	4.2	16	21	.12	.26	.10	9.0	30
16	5.5	4.2	4.8	5.0	4.2	16	19	.10	.28	.37	10	30
17	5.7	4.5	4.8	5.0	4.2	16	18	.10	.30	.37	11	30
18	6.2	5.3	4.8	4.9	4.2	16	19	.10	.30	.46	12	26
19	6.6	5.5	4.8	4.9	4.4	5.0	24	.10	.33	.56	12	32
20	7.4	5.7	4.8	4.8	4.4	1.0	25	.12	.41	1.2	13	35
21	7.4	5.7	4.8	4.8	4.4	.50	24	.10	.37	2.6	15	40
22	6.7	5.7	4.8	4.7	4.4	.20	22	.10	.37	2.6	17	50
23	6.3	5.7	4.8	4.7	4.4	.20	18	.09	.26	2.6	18	56
24	6.3	5.5	4.8	4.7	4.4	.20	15	.09	.24	1.2	18	56
25	6.1	5.4	4.8	4.6	4.4	.20	14	.09	.18	1.0	17	52
26	5.8	5.3	4.8	4.6	4.4	.15	13	.09	.26	1.0	16	44
27	5.7	5.2	4.8	4.5	4.6	.15	12	.09	.83	1.0	15	38
28	5.8	5.2	4.8	4.5	4.6	.15	11	.14	1.1	1.0	14	35
29	5.9	5.2	4.8	4.5	4.6	.15	10	.12	.83	1.5	14	32
30	5.9	5.0	4.8	4.3	---	2.0	9.0	.12	.30	2.0	14	32
31	6.2	---	4.8	4.0	---	1.6	---	.83	---	2.0	14	---
TOTAL	161.0	161.8	151.8	146.8	122.2	225.50	1112.4	50.68	24.84	22.97	298.1	850
MEAN	5.19	5.39	4.90	4.74	4.21	7.27	37.1	1.63	.83	.74	9.62	28.3
MAX	7.4	7.3	5.2	5.0	4.6	16	163	8.8	2.5	2.6	18	56
MIN	2.6	4.1	4.8	4.0	4.0	.15	1.4	.09	.18	.09	2.0	12
AC-FT	319	321	301	291	242	447	2210	101	49	46	591	1690

CAL YR 1979 TOTAL 16547.85 MEAN 45.3 MAX 884 MIN .46 AC-FT 32820
WTR YR 1980 TOTAL 3328.09 MEAN 9.09 MAX 163 MIN .09 AC-FT 6600

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN
(International gaging station)

LOCATION.—Lat 49°00'30", long 97°12'40", in sec.2, T.1, R.2 E., on right bank 1,500 ft (460 m) downstream from Canadian National Railway bridge in Emerson, 0.8 mi (1.3 km) downstream from international boundary, 3.6 mi (5.8 km) downstream from Pembina River, and at mile 154.3 (248.3 km).

DRAINAGE AREA.—40,200 mi² (104,100 km²), approximately, includes 3,800 mi² (9,840 km²) in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—March to November 1902 (gage heights only), May 1912 to September 1929 (monthly discharge only, published in WSP 1308), October 1929 to current year.

GAGE.—Water-stage recorder. Datum of gage is 700.00 ft (213.360 m) National Geodetic Vertical Datum of 1929, by Geodetic Survey of Canada. See WSP 1728 or 1913 for history of changes prior to Apr. 10, 1953.

REMARKS.—Records good. Discharge partially regulated by reservoirs on tributaries.

COOPERATION.—This station is one of the international gaging stations maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.—68 years (water years 1913-80) 3,310 ft³/s (93.74 m³/s), 2,398,000 acre-ft/yr (2.96 km³/yr); median of yearly mean discharges, 2,640 ft³/s (74.8 m³/s), 1,910,000 acre-ft/yr (2.4 km³/yr).

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 95,500 ft³/s (2,700 m³/s) May 13, 1950, gage height, 90.89 ft (27.703 m); maximum gage height, 91.19 ft (27.795 m) May 1, 1979; minimum observed discharge, 0.9 ft³/s (0.025 m³/s) Feb. 6-8, 1937, gage height, 44.00 ft (13.411 m).

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 22,000 ft³/s (623 m³/s) Apr. 9, gage height, 74.56 ft (22.726 m); minimum daily, 409 ft³/s (11.6 m³/s) Aug. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1830	1800	1370	1360	1330	1340	2950	3230	1640	1370	563	573
2	1820	1840	1420	1370	1330	1350	4760	3200	1630	1320	561	580
3	1800	1890	1510	1370	1330	1350	6510	3200	1620	1270	553	781
4	1760	1960	1490	1370	1330	1350	8490	3150	1600	1240	540	1930
5	1740	2040	1430	1370	1330	1360	10800	3060	1570	1200	500	2340
6	1710	2110	1400	1370	1330	1360	12900	2880	1540	1170	460	2210
7	1700	2170	1370	1370	1330	1360	15400	2780	1510	1160	440	1810
8	1700	2220	1370	1360	1330	1370	17800	2760	1490	1130	430	1370
9	1700	2270	1430	1360	1330	1370	20700	2740	1500	1120	425	1090
10	1710	2140	1540	1360	1330	1370	21700	2690	1520	1090	422	902
11	1730	2020	1690	1360	1330	1370	21300	2570	1540	1070	422	749
12	1740	2170	1830	1360	1330	1380	20000	2510	1580	1010	419	619
13	1740	1980	1890	1350	1330	1380	18400	2450	1590	950	417	538
14	1740	1800	1910	1350	1330	1380	16400	2400	1600	900	415	456
15	1710	1750	1890	1350	1330	1390	14000	2330	1630	845	412	453
16	1700	1770	1830	1350	1330	1390	12200	2300	1740	800	411	463
17	1690	1840	1720	1350	1330	1400	9700	2270	1810	750	409	470
18	1710	1920	1620	1350	1330	1410	8290	2270	1830	700	414	469
19	1720	2010	1540	1350	1330	1410	7270	2260	1830	670	430	465
20	1730	2140	1480	1340	1330	1410	6590	2230	1790	630	461	482
21	1730	2280	1460	1340	1330	1420	6120	2190	1720	610	492	521
22	1730	2330	1450	1340	1330	1430	5800	2130	1670	600	502	595
23	1740	2280	1440	1340	1330	1450	5570	2090	1670	585	514	641
24	1770	2140	1430	1340	1330	1480	5410	2030	1680	570	528	657
25	1790	1930	1420	1340	1330	1520	5180	1970	1700	563	542	661
26	1810	1740	1410	1340	1330	1590	4810	1910	1690	560	552	653
27	1810	1620	1400	1340	1330	1630	4320	1850	1630	560	553	649
28	1810	1540	1400	1330	1340	1700	3860	1790	1600	560	553	649
29	1800	1490	1390	1330	1340	1810	3540	1750	1530	561	557	661
30	1800	1460	1390	1330	---	2030	3330	1710	1450	562	560	674
31	1790	---	1380	1330	---	2300	---	1660	---	563	564	---
TOTAL	54260	58650	47300	41890	38590	45860	304100	74360	48900	26689	15021	25111
MEAN	1750	1955	1526	1351	1331	1479	10140	2399	1630	861	485	837
MAX	1830	2330	1910	1380	1340	2300	21700	3230	1830	1370	564	2340
MIN	1690	1460	1370	1330	1330	1340	2950	1660	1450	560	409	453
AC-FT	107600	116300	93820	83090	76540	90960	603200	147500	96990	52940	29790	49810

CAL YR 1979 TOTAL 3139522 MEAN 8601 MAX 92400 MIN 532 AC-FT 6227000
WTR YR 1980 TOTAL 780731 MEAN 2133 MAX 21700 MIN 409 AC-FT 1549000

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued
(National stream-quality accounting network station)
(Pesticide station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1977 to current year.
WATER TEMPERATURE: October 1977 to current year.

REMARKS.--Specific conductance and temperature monitor operated by Canada.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 1,200 micromhos Sept. 24, 1978 and Aug. 30, 1980; minimum daily mean, 330 micromhos Apr. 10, 16, 17, 1978.
WATER TEMPERATURES: Maximum daily mean, 25.0°C on several days in 1978, 1979 and 1980; minimum daily mean, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 1,200 micromhos Aug. 30; minimum daily mean, 450 micromhos Apr. 11.
WATER TEMPERATURES: Maximum daily mean, 25°C July 9, 11, 28; minimum daily mean, 0.5°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT										
24...	1115	1770	495	8.4	6.5	25	11.8	98	K14	K7
NOV										
28...	0900	1540	740	8.2	.5	5.8	14.7	104	K3	K9
DEC										
20...	1115	1490	720	7.8	1.0	6.3	12.8	90	56	28
JAN										
30...	1055	1330	599	7.8	1.0	3.3	11.6	80	130	360
FEB										
27...	1000	1330	607	7.7	.0	3.4	10.0	69	70	120
MAR										
25...	1200	1550	611	7.8	.5	6.3	10.8	77	250	780
APR										
30...	1025	3330	612	8.5	17.5	31	8.1	89	K5	K16
MAY										
12...	1200	2510	618	8.4	13.0	55	9.2	89	K7	35
JUN										
06...	1430	1540	575	8.4	22.0	54	7.7	92	29	24
JUL										
10...	0900	1090	595	8.2	26.0	110	6.5	82	30	48
AUG										
07...	0900	440	593	8.5	20.5	58	7.4	85	31	68
SEP										
11...	1105	750	611	8.2	18.5	90	8.0	88	63	130

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)
OCT										
24...	210	33	49	22	25	20	.7	30	5.4	180
NOV										
28...	280	63	64	30	44	25	1.1	50	6.4	220
DEC										
20...	260	34	61	27	36	22	1.0	42	5.6	230
JAN										
30...	260	37	60	26	26	18	.7	30	4.3	220
FEB										
27...	270	35	60	28	33	21	.9	9.2	4.1	230
MAR										
25...	250	34	59	26	29	20	.8	33	4.0	220
APR										
30...	260	65	61	25	28	19	.8	35	7.1	190
MAY										
12...	250	44	59	26	25	17	.7	31	5.8	210
JUN										
06...	230	53	52	25	33	23	.9	39	5.9	180
JUL										
10...	250	67	56	26	35	23	1.0	41	6.0	180
AUG										
07...	220	40	50	23	33	24	1.0	39	5.5	180
SEP										
11...	180	61	41	19	50	37	1.6	56	5.9	120

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT 24...	44	29	.2	8.9	312	293	.42	1490	.21	.19
NOV 28...	87	43	.2	12	430	419	.58	2570	.08	.11
DEC 20...	73	43	.2	13	410	398	.56	1650	.26	.26
JAN 30...	53	27	.2	13	377	343	.51	1350	.28	.28
FEB 27...	47	41	.2	14	363	367	.49	1440	.34	.32
MAR 25...	47	34	.2	14	347	347	.47	1450	.34	.36
APR 30...	93	25	.2	8.8	382	363	.52	3380	.07	.04
MAY 12...	77	26	.2	7.1	381	352	.52	2660	.04	.03
JUN 06...	74	32	.1	7.1	349	336	.47	1500	.12	.13
JUL 10...	100	31	.1	14	383	378	.52	1190	.35	.33
AUG 07...	62	42	.3	8.4	357	333	.49	627	.02	.04
SEP 11...	58	81	.2	9.8	419	339	.57	928	.39	.43

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)
OCT 24...	.00	.03	.04	1.6	1.1	1.6	.50	1.1	1.8	1.3
NOV 28...	.01	.01	.01	1.4	.99	1.4	.40	1.0	1.5	1.1
DEC 20...	.33	.34	.43	.87	1.2	1.2	.30	1.5	1.5	1.8
JAN 30...	.18	.17	.22	.29	.37	.47	.00	.54	.75	.82
FEB 27...	.16	.15	.19	.94	.95	1.1	.00	1.1	1.4	1.4
MAR 25...	.15	.15	.19	.95	.85	1.1	.10	1.0	1.4	1.4
APR 30...	.15	.11	.14	1.4	.99	1.5	.40	1.1	1.6	1.1
MAY 12...	.12	.04	.05	12	.65	12	11	.69	12	.72
JUN 06...	.04	.03	.04	1.3	.64	1.3	.63	.67	1.4	.80
JUL 10...	.01	.01	.01	1.3	.99	1.3	.30	1.0	1.7	1.3
AUG 07...	.09	.03	.04	.77	.89	.86	.00	.92	.88	.96
SEP 11...	.00	.00	.00	1.3	1.4	1.3	.00	1.4	1.7	1.8

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT 24...	8.0	.110	.34	.010	2	0	2	200	100	60
NOV 28...	6.6	.200	.61	.150	--	--	--	--	--	--
DEC 20...	6.5	.210	.64	.190	--	--	--	--	--	--
JAN 30...	3.3	.040	.12	.030	2	1	1	--	--	100
FEB 27...	6.4	.070	.21	.060	--	--	--	--	--	--
MAR 25...	6.4	.200	.61	.080	--	--	--	--	--	--
APR 30...	7.0	.160	.49	.030	4	1	3	300	200	80
MAY 12...	53	.140	.43	.050	--	--	--	--	--	--
JUN 06...	6.3	.170	.52	.060	4	0	4	100	30	70
JUL 10...	7.3	.130	.40	.100	6	2	4	200	100	100
AUG 07...	3.9	.150	.46	.100	--	--	--	--	--	--
SEP 11...	7.5	.190	.58	.080	--	--	--	--	--	--

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)
OCT 24...	0	0	<1	0	0	0	1	0	<3	3	3
NOV 28...	--	--	--	--	--	--	--	--	--	--	--
JAN 30...	0	0	<1	0	0	0	2	0	<3	7	5
APR 30...	1	0	<1	0	0	0	2	0	<3	12	5
MAY 12...	--	--	--	--	--	--	--	--	--	--	--
JUN 06...	0	0	<1	0	0	0	1	<1	<3	19	15
JUL 10...	0	0	<1	10	10	0	1	<1	<3	14	5
AUG 07...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	--	--	--	--	--	--	--	--	--	--	--

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
OCT 24...	0	810	800	<10	4	4	0	100	100	3	.1
NOV 28...	--	--	--	--	--	--	--	--	--	--	--
JAN 30...	2	250	240	10	10	10	0	30	0	30	.1
APR 30...	7	2100	2100	30	8	7	1	100	100	5	.9
MAY 12...	--	--	--	--	--	--	--	--	--	--	--
JUN 06...	4	2100	2100	<10	8	8	0	180	180	5	.1
JUL 10...	9	6200	6200	20	0	0	0	270	220	50	.2
AUG 07 ..	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	--	--	--	--	--	--	--	--	--	--	--

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)
OCT 24...	.0	.1	5	2	3	0	0	0	0	0
NOV 28...	--	--	--	--	--	--	--	--	--	--
JAN 30...	.1	.0	6	6	0	0	0	0	0	0
FEB 27...	--	--	--	--	--	--	--	--	0	--
MAR 25...	--	--	--	--	--	--	--	--	--	--
APR 30...	.7	.2	13	11	2	1	0	1	0	0
MAY 12...	--	--	--	--	--	--	--	--	0	--
JUN 06...	.1	.0	7	3	4	1	0	1	0	0
JUL 10...	.2	.0	6	1	5	1	0	1	0	0
AUG 07...	--	--	--	--	--	--	--	--	2	--
SEP 11...	--	--	--	--	--	--	--	--	--	--

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)
OCT 24...	0	40	30	6	17	16	.8	ND	ND	ND
NOV 28...	--	--	--	--	16	--	--	--	--	--
JAN 30...	0	10	0	10	15	14	.4	ND	ND	ND
FEB 27...	--	--	--	--	19	--	--	--	--	--
MAR 25...	--	--	--	--	13	--	--	--	--	--
APR 30...	0	50	40	6	11	10	.8	ND	ND	ND
MAY 12...	--	--	--	--	14	--	--	--	--	--
JUN 06...	0	10	7	3	--	14	.8	--	--	--
JUL 10...	0	50	40	6	--	9.6	.7	--	--	--
AUG 07...	--	--	--	--	12	--	--	--	--	--
SEP 11...	--	--	--	--	17	--	--	--	--	--

DATE	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELORIN TOTAL (UG/L) (39380)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)
OCT 24...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NOV 28...	--	--	--	--	--	--	--	--	--	--
JAN 30...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 27...	--	--	--	--	--	--	--	--	--	--
MAR 25...	--	--	--	--	--	--	--	--	--	--
APR 30...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Whole water ND - Not detected at 0.01 μg/L level.
Bed material ND - Not detected at 0.1 μg/mg level.

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT 24...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NOV 28...	--	--	--	--	--	--	--	--	--	--
DEC 20...	--	--	--	--	--	--	--	--	--	--
JAN 30...	ND	ND	ND	ND	ND	ND	ND	--	--	--
FEB 27...	--	--	--	--	--	--	--	--	--	--
MAR 25...	--	--	--	--	--	--	--	--	--	--
APR 30...	ND	ND	ND	ND	ND	ND	ND	--	--	--
MAY 12...	--	--	--	--	--	--	--	--	--	--
JUN 06...	--	--	--	--	--	--	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--	--	--
SEP 11...	--	--	--	--	--	--	--	--	--	--

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	LENGTH OF EXPO-SURE (DAYS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 24...	--	5.04	4.72	4.57	.000	27	54	258	99
NOV 28...	--	--	--	--	--	--	17	71	94
DEC 20...	--	--	--	--	--	--	9	36	97
JAN 30...	--	.000	.000	.050	.000	41	9	32	74
FEB 27...	--	--	--	--	--	--	16	57	81
MAR 25...	0	--	--	--	--	--	10	42	76
APR 30...	--	--	--	--	--	--	118	1060	98
MAY 12...	15000	1.97	1.81	.450	.070	13	115	779	99
JUN 06...	15000	9.53	8.50	8.51	.000	26	108	449	97
JUL 10...	4000	.472	.394	.690	.050	35	230	677	99
AUG 07...	5200	--	--	--	--	--	100	119	100
SEP 11...	10000	--	--	--	--	--	160	324	100

Whole water ND - Not detected at 0.01 μg/L level.
Bed material ND - Not detected at 0.1 μg/mg level.

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	570	485	820	720	685	715	750	490	640	660	660	1030
2	620	490	830	720	680	715	770	580	640	650	640	980
3	640	490	840	730	680	715	730	600	---	660	650	1020
4	660	500	920	720	680	715	650	590	700	730	630	1080
5	680	540	930	725	680	710	640	590	680	630	660	1120
6	685	560	930	710	700	715	---	570	640	620	670	700
7	695	640	910	690	750	730	550	570	630	650	670	540
8	700	670	900	700	750	730	530	720	620	670	670	520
9	705	660	900	700	760	735	500	720	610	650	670	560
10	520	670	900	700	760	735	500	690	650	660	680	600
11	500	690	870	720	760	740	450	690	650	660	650	640
12	470	710	850	700	760	740	480	690	670	590	660	660
13	465	700	830	670	755	740	510	690	670	610	650	700
14	465	750	800	670	755	740	520	690	650	620	640	700
15	465	760	780	670	770	740	580	700	630	630	750	680
16	460	780	---	660	740	735	640	700	630	620	730	720
17	460	800	---	650	730	735	660	---	650	620	640	730
18	460	820	750	650	740	725	680	---	640	630	630	750
19	470	820	760	670	740	725	700	---	630	610	610	720
20	460	820	760	690	735	720	680	---	650	610	620	800
21	470	---	750	670	725	725	690	690	650	610	620	880
22	470	---	760	660	710	730	730	680	650	620	930	900
23	475	750	780	640	700	745	730	650	660	650	950	800
24	490	720	780	630	690	735	710	700	650	610	940	810
25	480	690	760	640	685	735	720	650	650	680	910	840
26	490	710	770	640	710	730	700	660	640	750	880	910
27	490	710	770	---	725	740	700	660	650	740	860	880
28	490	760	760	655	720	730	650	650	630	730	880	920
29	495	780	750	680	715	730	620	640	650	680	1020	950
30	500	800	750	700	---	730	620	640	660	660	1200	1000
31	500	---	730	705	---	735	---	640	---	680	1080	---
MEAN	532	688	815	683	724	730	634	650	647	651	756	805

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.5	3.5	.5	1.0	1.0	1.0	1.0	13.5	21.0	19.5	22.0	17.0
2	12.0	2.5	.5	1.0	1.0	1.0	1.0	13.0	21.0	20.0	21.5	17.5
3	11.5	2.5	.5	1.0	1.0	1.0	1.0	13.0	21.0	21.5	21.5	17.0
4	10.5	2.5	.5	1.0	1.0	1.0	1.5	14.0	20.0	23.0	21.0	17.0
5	10.0	2.5	.5	1.0	1.0	1.0	2.0	13.5	20.0	23.0	19.5	17.0
6	9.0	2.0	.5	1.0	1.0	1.0	---	13.0	21.0	23.0	19.0	17.0
7	9.0	3.0	.5	1.0	1.0	1.0	1.0	13.0	19.0	23.0	19.5	16.0
8	9.0	3.0	.5	1.0	1.0	1.0	1.0	14.0	19.0	23.0	20.0	19.0
9	8.5	2.0	.5	1.5	1.0	1.0	1.5	13.5	20.0	25.0	20.0	21.0
10	8.5	1.0	.5	1.5	1.0	1.0	2.5	13.0	20.0	25.0	19.5	17.0
11	8.0	1.0	.5	1.0	1.0	1.0	3.0	13.0	22.0	25.0	19.5	17.0
12	7.0	1.0	.5	1.0	1.0	1.0	3.5	12.5	22.0	22.5	19.5	17.5
13	5.5	1.5	.5	1.0	1.0	1.0	4.0	12.5	21.5	23.0	20.0	17.0
14	6.0	1.5	.5	1.0	1.0	1.0	5.0	13.0	21.5	23.0	20.5	17.0
15	7.0	1.5	.5	1.0	1.0	1.0	5.5	13.5	21.5	23.0	21.0	16.5
16	7.0	1.5	---	1.0	1.0	1.0	6.0	13.5	21.5	23.0	19.5	15.5
17	7.0	1.5	---	1.0	1.0	1.0	6.5	---	21.0	23.0	17.5	14.0
18	7.0	1.5	1.0	1.0	1.0	1.0	8.0	---	21.0	24.0	17.0	13.0
19	7.0	1.5	1.0	1.0	1.0	1.0	9.0	---	21.0	23.0	19.0	12.0
20	7.5	1.0	1.0	1.0	1.0	1.0	12.0	---	21.0	23.0	20.5	11.5
21	7.0	---	1.0	1.0	1.0	1.0	13.0	19.0	21.0	23.0	20.5	11.5
22	6.5	---	1.0	1.0	1.0	1.0	11.0	20.0	22.0	23.5	19.5	12.0
23	5.5	1.0	1.0	1.0	1.0	1.0	11.0	20.0	23.0	22.5	19.5	11.0
24	5.5	.5	1.0	1.0	1.0	1.0	11.0	22.0	23.0	21.0	19.0	10.5
25	5.0	.5	1.0	1.0	1.0	1.0	12.5	22.0	23.0	23.0	21.0	10.0
26	5.0	.5	1.0	1.0	1.0	1.0	13.0	22.0	22.0	24.5	19.0	10.5
27	5.5	.5	1.0	---	1.0	1.0	14.0	23.0	21.0	24.0	18.5	10.5
28	6.0	1.0	1.0	1.0	1.0	1.0	15.5	23.0	20.0	25.0	18.0	11.0
29	6.0	.5	1.0	1.0	1.0	1.0	16.0	22.5	20.0	24.0	18.0	13.0
30	6.0	.5	1.0	1.0	---	1.0	17.0	23.0	20.0	21.5	17.5	---
31	5.0	---	1.0	1.0	---	1.0	---	22.0	---	22.0	17.5	---
MEAN	7.5	1.5	.5	1.0	1.0	1.0	7.0	16.5	21.0	23.0	19.5	14.5

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAR 25,80		MAY 12,80		JUN 6,80		JUL 10,80		AUG 7,80		SEP 11,80	
TIME	1200		1200		1430		0900		0900		1105	
TOTAL CELLS/ML	0		15000		15000		4000		5200		10000	
DIVERSITY: DIVISION	0.0		1.1		1.7		1.7		1.5		1.3	
.CLASS	0.0		1.1		1.8		1.7		1.6		1.3	
..ORDER	0.0		1.4		2.1		2.0		1.9		1.9	
...FAMILY	0.0		2.9		2.9		2.8		2.0		2.2	
....GENUS	0.0		3.8		3.5		3.6		2.9		2.9	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...COELASTRACEAE												
....COELASTRUM	--	-	1400	9	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	610	4	2000	13	540	14	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	78	1	--	-	--	-	--	-
....MICRACTINIUM	--	-	1100	7	--	-	160	4	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	730	5	780	5	39	1	120	2	100	1
....CHODATELLA	--	-	*	0	--	-	--	-	--	-	--	-
....CLOSTERIDIUM	--	-	--	-	--	-	--	-	*	0	--	-
....DICTYOSPHAERIUM	--	-	1200	8	390	3	--	-	340	6	--	-
....GLOEOACTINIUM	--	-	1500	10	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	1100	7	--	-	99	2	--	-
....OOCYSTIS	--	-	--	-	--	-	78	2	610	12	--	-
....SELENASTRUM	--	-	420	3	--	-	65	2	--	-	1500#	15
....TETRAEDRON	--	-	--	-	160	1	*	0	*	0	--	-
....TREUBARIA	--	-	*	0	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	1600	11	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	52	1	--	-	130	1
....SCENEDESMUS	--	-	2100	14	780	5	160	4	79	2	670	7
....TETRASTRUM	--	-	150	1	310	2	570	14	--	-	540	5
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	77	1	390	3	78	2	79	2	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	340	2	2600#	17	620#	16	300	6	270	3
....MELOSIRA	--	-	--	-	240	2	590	15	2200#	42	340	3
....STEPHANODISCUS	--	-	--	-	--	-	*	0	39	1	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	160	1	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	270	2	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	78	1	*	0	--	-	--	-
....NAVICULA	--	-	--	-	--	-	26	1	*	0	*	0
...NITZSCHIACEAE												
....NITZSCHIA	--	-	150	1	1000	7	230	[illegible]	360	7	200	2
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	78	1	26	1	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	78	1	--	-	--	-	--	-
...OCHROMONADACEAE												
....OCHROMONAS	--	-	--	-	--	-	--	-	59	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	*	0	160	1	*	0	--	-	*	0
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	*	0	160	1	39	1	39	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	610	4	3800#	25	--	-	630	12	1100	10
....ANACYSTIS	--	-	1400	10	630	4	130	3	200	4	3000#	29
....COCCOCHLORIS	--	-	--	-	78	1	470	12	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	1000	7	--	-	--	-	--	-	2400#	23

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

05102500 RED RIVER OF THE NORTH AT EMERSON, MAN.--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	MAR 25,80		MAY 12,80		JUN 6,80		JUL 10,80		AUG 7,80		SEP 11,80	
TIME	1200		1200		1450		0900		0900		1105	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	*	0	--	-	26	1	--	-	--	-
....PHACUS	--	-	--	-	78	1	--	-	*	0	--	-
....TRACHELOMONAS	--	-	--	-	--	-	52	1	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	*	0	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05113360 LONG CREEK AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY, SASK.
(International gaging station)

LOCATION.--Lat 49°00'01", long 103°21'08", in SE¼ sec.1, T.1, R.11 W., 2d meridian, Hydrologic Unit 09010001, and on right bank 10 mi (16 km) south of Outram.

DRAINAGE AREA.--1,320 mi^2 (3,420 km^2).

PERIOD OF RECORD.--March 1959 to current year.

GAGE.--Water-stage recorder and artificial control. Datum of gage is 1,894.00 ft (577.291 m) National Geodetic Vertical Datum of 1929, international boundary survey.

REMARKS.--Records good except those for the winter period, which are fair. Discharge affected by storage in upstream reservoirs.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.--21 years, 43.2 ft^3/s (1.223 m^3/s), 31,300 acre-ft/yr (38.6 hm^3/yr); median of yearly mean discharges, 31 ft^3/s (0.88 m^3/s), 22,500 acre-ft/yr (28 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,690 ft^3/s (133 m^3/s) Apr. 1, 1976, gage height, 12.05 ft (3.673 m); maximum gage height, 12.70 ft (3.871 m) Mar. 31, 1976 backwater from ice; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 85 ft^3/s (2.40 m^3/s) Apr. 3, gage height, 2.59 ft (0.790 m); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	36	4.2	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	31	3.6	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	38	2.8	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	25	2.4	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	23	2.2	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	21	1.7	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	21	1.7	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	21	1.8	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	23	1.4	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	23	.88	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	25	.81	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	28	.67	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	31	.56	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	40	.49	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	58	.42	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	55	.35	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	41	.32	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	33	.28	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	26	.25	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	22	.21	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.53	19	.18	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	5.5	16	.14	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	6.7	13	.11	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	16	11	.07	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	31	9.2	.04	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	35	7.8	.02	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	34	6.7	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	31	5.6	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	42	4.9	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	43	4.3	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	38	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	282.73	718.5	27.60	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	9.12	24.0	.89	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	43	58	4.2	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	4.3	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	561	1430	55	.00	.00	.00	.00

CAL YR 1979 TOTAL 45775.83 MEAN 125 MAX 4170 MIN .00 AC-FT 90800
WTR YR 1980 TOTAL 1028.83 MEAN 2.81 MAX 58 MIN .00 AC-FT 2040

05113600 LONG CREEK NEAR NOONAN, ND
(International gaging station)

LOCATION.--Lat 48°58'52", long 103°04'34", near north line of NE¼ sec.1, T.163 N., R.96 W., Divide County, Hydrologic Unit 09010001, on right bank 150 ft (46 m) upstream from county highway bridge, 1.5 mi (2.4 km) upstream from international boundary, and 7 mi (11 km) northwest of Noonan.

DRAINAGE AREA.--1,790 mi² (4,640 km²), approximately, of which about 1,160 mi² (3,000 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1959 to current year.

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,840 ft (561 m), from topographic map. Prior to Aug. 18, 1960, nonrecording gage at same site and datum.

REMARKS.--Records fair.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--21 years, 55.6 ft³/s (1.575 m³/s), 40,280 acre-ft/yr (49.7 hm³/yr); median of yearly mean discharges, 40 ft³/s (1.13 m³/s), 29,000 acre-ft/yr (36 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,310 ft³/s (179 m³/s) Mar. 31, 1976, gage height, 17.61 ft (5.367 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 80 ft³/s (2.27 m³/s) Mar. 28, gage height, 4.83 ft (1.472 m), backwater from ice, no peak above base of 200 ft³/s (5.66 m³/s); no flow July 26 - Aug. 15, Aug. 27 - Sept. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.96	.65	.76	.53	.16	.19	46	8.6	.20	.04	.00	.00
2	.96	.65	.76	.50	.16	.19	36	7.8	.15	.04	.00	.00
3	.76	.65	.76	.43	.16	.19	31	6.7	.13	.03	.00	.00
4	.60	.65	.80	.42	.16	.19	32	5.9	.24	.03	.00	.00
5	.50	.60	.82	.42	.16	.19	30	5.4	.22	.03	.00	.00
6	.43	.60	.76	.42	.16	.19	25	5.1	.17	.03	.00	.00
7	.39	.60	.70	.41	.16	.19	24	4.9	.14	.06	.00	.00
8	.43	.60	.70	.31	.16	.19	31	4.5	.14	.05	.00	.00
9	.47	.60	.76	.28	.19	.19	31	3.1	.14	.03	.00	.00
10	.46	.60	.76	.28	.19	.19	31	2.2	.07	.02	.00	.00
11	.42	.60	.76	.25	.19	.19	33	2.0	.05	.03	.00	.00
12	.45	.60	.76	.25	.19	.19	39	1.9	.08	.03	.00	.00
13	.47	.60	.76	.30	.19	.22	43	2.0	.07	.02	.00	.00
14	.48	.63	.76	.30	.19	.22	46	1.7	.04	.03	.00	.00
15	.50	.70	.75	.34	.19	.22	53	1.6	.03	.02	.00	.00
16	.50	.76	.64	.34	.19	.25	73	1.3	.03	.02	.01	.00
17	.52	.76	.55	.34	.19	.28	73	.96	.03	.02	.01	.00
18	.55	.76	.55	.34	.19	2.0	56	1.1	.03	.02	.01	.00
19	.50	.76	.55	.34	.19	7.0	43	.95	.03	.01	.01	.01
20	1.0	.76	.55	.31	.19	6.0	35	.67	.03	.02	.02	.01
21	1.5	.76	.55	.31	.19	9.0	29	.68	.03	.02	.03	.02
22	1.4	.76	.55	.31	.19	3.0	25	.57	.03	.01	.02	.03
23	1.0	.76	.57	.28	.19	1.0	21	.51	.03	.01	.02	.03
24	.88	.76	.65	.28	.19	1.0	18	.41	.05	.01	.02	.03
25	.73	.75	.70	.25	.19	15	16	.30	.05	.01	.01	.03
26	.72	.70	.70	.25	.19	20	14	.30	.03	.00	.01	.02
27	.69	.70	.70	.22	.19	25	13	.30	.04	.00	.00	.02
28	.67	.70	.70	.19	.19	60	12	.33	.05	.00	.00	.02
29	.60	.70	.72	.16	.19	55	10	.23	.03	.00	.00	.02
30	.64	.76	.68	.14	---	45	8.7	.16	.03	.00	.00	.02
31	.65	---	.61	.14	---	54	---	.16	---	.00	.00	---
TOTAL	20.83	20.48	21.34	9.64	5.27	306.47	977.7	72.33	2.39	.64	.17	.26
MEAN	.67	.68	.69	.31	.18	9.89	32.6	2.33	.080	.021	.005	.009
MAX	1.5	.76	.82	.53	.19	60	73	8.6	.24	.06	.03	.03
MIN	.39	.60	.55	.14	.16	.19	8.7	.16	.03	.00	.00	.00
AC-FT	41	41	42	19	10	608	1940	143	4.7	1.3	.3	.5

CAL YR 1979 TOTAL 59929.09 MEAN 164 MAX 4650 MIN .23 AC-FT 118900
WTR YR 1980 TOTAL 1437.52 MEAN 3.93 MAX 73 MIN .00 AC-FT 2850

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND

LOCATION.--Lat 48°58'04", long 102°51'04", in SW¼SW¼SW¼ sec.2, T.163 N., R.94 W., Burke County, Hydrologic Unit 09010001, on right bank 1,000 ft (305 m) downstream from bridge on county road, 5.4 mi (8.7 km) northwest of Columbus, 3.1 mi (5.0 km) upstream from international boundary, and 6 mi (9.7 km) upstream from the confluence with East Branch Short Creek.

DRAINAGE AREA.--167 mi^2 (432 km^2), of which 87 mi^2 (225 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,880 ft (573 m), from topographic map.

REMARKS.--Records good except those for March 15-31, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,540 ft^3/s (43.6 m^3/s) Apr. 19, 1979, gage height, 8.04 ft (2.451 m); maximum gage height, 10.77 ft (3.283 m) Apr. 18, 1979, ice jam; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 55 ft^3/s (1.56 m^3/s) Mar. 29, gage height, 5.70 ft (1.737 m), no peak above base of 100 ft^3/s (2.83 m^3/s); maximum gage height, 6.07 ft (1.850 m) Mar. 28, ice jam; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.18	.00	.00	.00	25	.64	.00	.00	.00	.00
2	.00	.00	.15	.00	.00	.00	25	.68	.00	.00	.00	.00
3	.00	.00	.15	.00	.00	.00	21	.68	.00	.00	.00	.00
4	.00	.00	.15	.00	.00	.00	17	.64	.00	.00	.00	.00
5	.00	.00	.13	.00	.00	.00	14	.51	.00	.00	.00	.00
6	.00	.00	.11	.00	.00	.00	10	.44	.00	.00	.00	.00
7	.00	.00	.11	.00	.00	.00	9.6	.38	.00	.00	.00	.00
8	.00	.00	.09	.00	.00	.00	9.1	.31	.00	.00	.00	.00
9	.00	.00	.08	.00	.00	.00	7.5	.28	.00	.00	.00	.00
10	.00	.00	.06	.00	.00	.00	7.9	.23	.00	.00	.00	.00
11	.00	.00	.04	.00	.00	.00	8.7	.16	.00	.00	.00	.00
12	.00	.00	.03	.00	.00	.00	9.6	.13	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	14	.10	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	27	.08	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	23	.06	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	16	.04	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	10	.03	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.01	8.7	.00	.00	.00	.00	.00
19	.00	2.0	.00	.00	.00	.01	7.5	.00	.00	.00	.00	.00
20	.00	3.6	.00	.00	.00	.02	6.5	.00	.00	.00	.00	.00
21	.00	2.6	.00	.00	.00	.03	5.2	.00	.00	.00	.00	.00
22	.00	2.0	.00	.00	.00	.01	4.6	.00	.00	.00	.00	.00
23	.00	1.5	.00	.00	.00	.01	4.0	.00	.00	.00	.00	.00
24	.00	1.2	.00	.00	.00	.10	3.0	.00	.00	.00	.00	.00
25	.00	.88	.00	.00	.00	1.0	2.4	.00	.00	.00	.00	.00
26	.00	.68	.00	.00	.00	5.0	1.9	.00	.00	.00	.00	.00
27	.00	.51	.00	.00	.00	15	1.5	.00	.00	.00	.00	.00
28	.00	.44	.00	.00	.00	30	1.1	.00	.00	.00	.00	.00
29	.00	.34	.00	.00	.00	35	.88	.00	.00	.00	.00	.00
30	.00	.25	.00	.00	---	31	.68	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	29	---	.00	---	.00	.00	---
TOTAL	.00	16.00	1.28	.00	.00	146.19	302.36	5.39	.00	.00	.00	.00
MEAN	.000	.53	.041	.000	.000	4.72	10.1	.17	.000	.000	.000	.000
MAX	.00	3.6	.18	.00	.00	35	27	.68	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.68	.00	.00	.00	.00	.00
AC-FT	.00	32	2.5	.00	.00	290	600	11	.00	.00	.00	.00

CAL YR 1979 TOTAL 5417.08 MEAN 14.8 MAX 900 MIN .00 AC-FT 10740
WTR YR 1980 TOTAL 471.22 MEAN 1.29 MAX 35 MIN .00 AC-FT 935

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
DEC 11...	0935	.05	3850	8.7	-18.0	.0	--	--	K3	100	350	0
MAR 27...	1020	15	670	7.4	12.0	1.0	9.0	65	K13	K10000	89	0
APR 11...	0955	8.6	1580	8.3	.5	6.0	11.7	98	<1	300	230	0
MAY 13...	0915	.10	2700	8.8	7.5	11.0	7.6	72	270	240	410	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
DEC 11...	53	52	850	92	20	16	976	14	824	3.2	1300	21
MAR 27...	19	10	120	72	6.1	10	148	0	121	9.4	200	7.2
APR 11...	43	30	290	72	8.3	10	294	0	241	2.4	560	18
MAY 13...	71	56	530	73	13	16	466	31	434	1.3	1100	23

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
DEC 11...	.5	19	2860	2810	3.89	.39	.07	.07	.18	.22	2.6	2.8
MAR 27...	.2	7.6	448	449	.61	18.5	.30	.27	.12	.15	1.4	1.5
APR 11...	.2	13	1060	1110	1.44	24.6	.00	.00	.02	.02	1.5	1.5
MAY 13...	.4	12	2050	2070	2.79	.55	.05	.08	.09	.11	2.9	3.0

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)
DEC 11...	2.9	13	.200	.61	.070	--	--	--	--	--	--
MAR 27...	1.8	8.0	.210	.64	.140	80	2	0	--	100	30
APR 11...	1.5	6.6	.180	.55	.120	--	--	--	--	--	--
MAY 13...	3.1	14	.070	.21	.050	20	5	0	8	100	30

DATE	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, SUSPENDED RECOV. (UG/L AS BE) (01011)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)
DEC 11...	--	--	--	--	--	--	230	--	--	--	--
MAR 27...	70	--	0	0	<1	--	130	20	20	0	--
APR 11...	--	--	--	--	--	--	200	--	--	--	--
MAY 13...	70	180	0	--	<1	0	310	0	0	0	8

DATE	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM SUSPENDED RECOVERABLE (UG/L AS LI) (01131)
DEC 11...	--	--	--	--	--	--	--	--	90	--	--
MAR 27...	1	0	<3	--	6	0	<10	--	130	20	2
APR 11...	--	--	--	--	--	--	--	--	80	--	--
MAY 13...	0	--	<3	20	4	--	<10	36	61	90	0

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, SUSPENDED RECOV. (UG/L AS MO) (01061)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)
DEC 11...	--	--	--	--	--	--	--	--	--	--	--
MAR 27...	18	100	30	68	.1	.1	.0	--	0	0	<10
APR 11...	--	--	--	--	--	--	--	--	--	--	--
MAY 13...	100	150	140	11	.7	.6	.1	.04	5	--	<10

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
DEC 11...	--	--	--	--	--	--	--	--	--	--	--
MAR 27...	--	5	4	1	--	0	0	0	--	190	<6.0
APR 11...	--	--	--	--	--	--	--	--	--	--	--
MAY 13...	4	10	3	7	30	0	0	0	0	1000	<6.0

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)
DEC 11...	--	--	--	--	--	--	--
MAR 27...	120	120	5	--	<5.9	<.5	8.4
APR 11...	--	--	--	--	--	--	--
MAY 13...	10	--	<3	30	39	<1.0	26

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
DEC 11...	--	--	--	46	.5	35	.00
MAR 27...	<.5	8.6	<.6	24	2.0	39	1.6
APR 11...	--	--	--	28	1.1	10	.23
MAY 13...	<1.5	25	<1.5	23	.9	36	.01

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAY 13...	49	70	80	85	87	91	95	98	98	100

05113700 WEST BRANCH SHORT CREEK NEAR COLUMBUS, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO MAY 1980

DATE	DEC 11,79	MAR 27,80	APR 11,80	MAY 13,80
TIME	0935	1020	0955	0915
TOTAL CELLS/ML	12000	800	5700	11000
DIVERSITY: DIVISION	1.9	1.0	1.9	1.3
.CLASS	1.9	1.0	1.9	1.3
..ORDER	1.9	1.3	2.3	1.9
...FAMILY	2.1	2.0	3.0	2.2
....GENUS	2.3	2.0	3.2	3.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	86	1	--	-	--	-	--	-
...MICRACTINIACEAE								
....MICRACTINIUM	--	-	--	-	280	5	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	1900#	16	96	12	350	6	1700#	17
....CHLORELLA	--	-	--	-	--	-	400	4
....CHODATELLA	--	-	--	-	*	0	--	-
....DICTYOSPHAERIUM	--	-	--	-	160	3	270	3
....KIRCHNERIELLA	340	3	--	-	54	1	--	-
....OOCYSTIS	--	-	--	-	--	-	67	1
....SELENASTRUM	--	-	--	-	--	-	800	8
....TETRAEDRON	86	1	--	-	--	-	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	170	1	10	1	81	1	940	9
....TETRASTRUM	340	3	--	-	220	4	270	3
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	120#	15	510	9	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	940	8	10	1	160	3	67	1
....MELOSIRA	--	-	--	-	*	0	--	-
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	*	0	--	-
...NAVICULACEAE								
....NAVICULA	--	-	5	1	140	2	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	5	1	--	-	200	2
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	110	2	1600#	15
....COCCOCHLORIS	--	-	--	-	--	-	1200	11
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	400#	50	540	10	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	1900#	33	2500#	24
....SCHIZOTHRIX	1500	13	150#	19	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	5600#	48	--	-	950#	17	--	-
....TRACHELOMONAS	--	-	--	-	--	-	400	4
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	690	6	--	-	110	2	--	-
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	54	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05113750 EAST BRANCH SHORT CREEK RESERVOIR NEAR COLUMBUS, ND

LOCATION.--Lat 48°59'26", long 102°47'07", in SW¼NW¼ sec.32, T.164 N., R.93 W., Burke County, Hydrologic Unit 09010001, on left bank of reservoir on East Branch Short Creek, 0.5 mi (0.8 km) south of international boundary, and 6.0 mi ([illegible] km) north of Columbus.

DRAINAGE AREA.--280 mi² (725 km²), of which 175 mi² (453 km²) is noncontributing.

PERIOD OF RECORD.--April 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft (566.928 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth-fill dam; storage began April 1963. Outlet of lake is a fixed-crest concrete dam; average crest elevation, 1,886.90 ft (575.127 m) National Geodetic Vertical Datum of 1929. Reservoir capacity at crest elevation, 1,200 acre-ft (1.48 hm³). The reservoir is operated for water supply and recreation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,850 acre-ft (2.28 hm³) Mar. 28, 1976, gage height, 32.13 ft (9.793 m); minimum, 890 acre-ft (1.10 hm³) Dec. 10, 1977, gage height, 23.92 ft (7.291 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,310 acre-ft (1.62 hm³) Apr. 16, gage height, 27.92 ft (8.510 m); minimum, 1,070 acre-ft (1.32 hm³) Sept. 16, gage height, 25.84 ft (7.876 m).

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	26.65	1,160	—
Oct. 31	26.37	1,130	-30
Nov. 30	*26.31	1,120	-10
Dec. 31	*26.29	1,120	0
CAL YR 1979	—	—	-70
Jan. 31	*26.30	1,120	0
Feb. 29	*26.30	1,120	0
Mar. 31	27.48	1,260	+140
Apr. 30	*27.60	1,270	+10
May 31	26.96	1,200	-70
June 30	26.44	1,140	-60
July 31	*26.20	1,110	-30
Aug. 31	25.99	1,090	-20
Sept. 30	25.90	1,080	-10
WTR YR 1980	—	—	-80

* - Estimated

05113800 SHORT CREEK BELOW INTERNATIONAL BOUNDARY NEAR ROCHE PERCEE, SASK.
(International gaging station)

LOCATION.--Lat 49°01'42", long 102°51'00", in SW¼ sec.14, T.1, R.7 W., 2d meridian, Hydrologic Unit 09010001, 4 mi (6 km) southwest of Roche Percee, Saskatchewan, and 5 mi (8 km) upstream from mouth.

DRAINAGE AREA.--480 mi² (1,240 km²).

PERIOD OF RECORD.--March 1960 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records good except those for the winter period, which are fair.

COOPERATION.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

AVERAGE DISCHARGE.--20 years, 14.1 ft³/s (0.399 m³/s), 10,220 acre-ft/yr (12.6 hm³/yr); median of yearly mean discharges, 4.8 ft³/s (0.14 m³/s), 3,500 acre-ft/yr (4.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,700 ft³/s (48.1 m³/s) Apr. 7, 1969, gage height, 14.33 ft (4.368 m); maximum gage height, 14.39 ft (4.386 m) Mar. 28, 1960; no flow on many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 36 ft³/s (1.02 m³/s) Mar. 30; maximum gage height, 6.01 ft (1.832 m) Mar. 26, backwater from ice; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.04	.07	.04	.00	.00	19	.21	.00	.00	.00	.00
2	.00	.04	.07	.04	.00	.00	25	.14	.00	.00	.00	.00
3	.00	.04	.07	.00	.00	.00	20	.14	.00	.00	.00	.00
4	.00	.04	.07	.00	.00	.00	16	.07	.00	.00	.00	.00
5	.00	.04	.07	.00	.00	.00	13	.11	.00	.00	.00	.00
6	.00	.04	.07	.00	.00	.00	10	.07	.00	.00	.00	.00
7	.00	.04	.07	.00	.00	.00	9.4	.07	.00	.00	.00	.00
8	.00	.04	.07	.00	.00	.00	9.3	.04	.00	.00	.00	.00
9	.00	.04	.11	.00	.00	.00	8.6	.00	.00	.00	.00	.00
10	.00	.04	.11	.00	.00	.00	8.2	.00	.00	.00	.00	.00
11	.00	.04	.11	.00	.00	.00	8.6	.00	.00	.00	.00	.00
12	.00	.04	.11	.00	.00	.00	9.5	.04	.00	.00	.00	.00
13	.00	.04	.11	.00	.00	.00	11	.14	.00	.00	.00	.00
14	.00	.04	.07	.00	.00	.00	21	.21	.00	.00	.00	.00
15	.00	.04	.07	.00	.00	.00	26	.32	.00	.00	.00	.00
16	.00	.07	.07	.00	.00	.00	22	.25	.00	.00	.00	.00
17	.00	.07	.07	.00	.00	.00	15	.21	.00	.00	.00	.00
18	.00	.07	.07	.00	.00	1.0	12	.28	.00	.00	.00	.00
19	.00	.04	.11	.00	.00	2.0	10	.28	.00	.00	.00	.00
20	.00	.04	.07	.00	.00	2.8	9.1	.28	.00	.00	.00	.00
21	.00	.04	.07	.00	.00	3.5	7.6	.25	.00	.00	.00	.00
22	.00	.04	.07	.00	.00	1.9	5.5	.21	.00	.00	.00	.00
23	.00	.04	.04	.00	.00	1.4	4.7	.14	.00	.00	.00	.00
24	.04	.04	.04	.00	.00	1.5	3.7	.11	.00	.00	.00	.00
25	.04	.04	.04	.00	.00	2.8	2.4	.07	.00	.00	.00	.00
26	.04	.07	.04	.00	.00	16	1.4	.04	.00	.00	.00	.00
27	.04	.07	.04	.00	.00	18	1.0	.07	.00	.00	.00	.00
28	.04	.07	.07	.00	.00	29	.67	.04	.00	.00	.00	.00
29	.04	.07	.04	.00	.00	33	.46	.00	.00	.00	.00	.00
30	.04	.07	.04	.00	---	36	.35	.00	.00	.00	.00	.00
31	.04	---	.04	.00	---	25	---	.00	---	.00	.00	---
TOTAL	.32	1.44	2.17	.08	.00	173.90	310.48	3.79	.00	.00	.00	.00
MEAN	.010	.048	.070	.003	.000	5.61	10.3	.12	.000	.000	.000	.000
MAX	.04	.07	.11	.04	.00	36	26	.32	.00	.00	.00	.00
MIN	.00	.04	.04	.00	.00	.00	.35	.00	.00	.00	.00	.00
AC-FT	.6	2.9	4.3	.2	.00	345	616	7.5	.00	.00	.00	.00

CAL YR 1979 TOTAL 12802.24 MEAN 35.1 MAX 1370 MIN .00 AC-FT 25390
WTR YR 1980 TOTAL 492.18 MEAN 1.34 MAX 36 MIN .00 AC-FT 976

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND
(International gaging station)

LOCATION.--Lat 48°59'24", long 101°57'28", in NW¼SE¼NE¼ sec.33, T.164 N., R.87 W., Renville County, Hydrologic Unit 09010001, on right bank 0.8 mi (1.3 km) downstream from international boundary, 16 mi (26 km) northwest of Sherwood, and at mile 511.4 (822.8 km).

DRAINAGE AREA.--8,940 mi² (23,150 km²), approximately, of which about 5,900 mi² (15,300 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1930 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1934, 1945. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,603.73 ft (488.817 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 8, 1935, nonrecording gage at same site and datum.

REMARKS.--Records good. Some regulation by reservoirs in Canada. Some small diversions for irrigation and municipal supply.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--50 years, 142 ft³/s (4.020 m³/s), 102,900 acre-ft/yr (127 hm³/yr); median of yearly mean discharges, 79 ft³/s (2.24 m³/s), 57,200 acre-ft/yr (71 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft³/s (419 m³/s) Apr. 10, 1976, gage height, 25.15 ft (7.666 m); no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1927 reached a stage of about 22 ft (6.7 m) and flood in 1904 reached a stage of about 25.8 ft (7.86 m) from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 630 ft³/s (17.8 m³/s) Apr. 4, gage height, 8.50 ft (2.591 m), backwater from ice; minimum daily, 0.40 ft³/s (0.011 m³/s) Sept. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	8.8	14	5.4	5.5	5.4	165	82	9.2	2.4	1.4	.40
2	5.8	8.3	13	5.0	5.6	5.4	169	75	9.0	2.3	1.2	.50
3	5.6	8.8	13	4.4	5.6	5.4	171	82	7.8	2.2	1.0	.45
4	7.4	8.8	12	4.3	5.6	5.4	520	82	6.6	2.1	1.1	.45
5	7.1	8.8	12	4.4	5.6	5.4	598	75	6.2	2.0	1.2	.50
6	5.7	8.8	12	4.6	5.6	5.4	469	70	5.8	1.9	1.1	.50
7	5.1	8.5	12	4.6	5.6	5.4	386	67	5.6	1.8	1.0	.50
8	5.1	8.5	11	4.4	5.6	5.4	295	62	5.4	1.8	1.0	.50
9	5.0	10	11	4.8	5.6	5.4	265	61	5.2	1.7	1.0	.50
10	4.6	10	10	4.8	5.6	5.4	232	57	5.0	1.7	1.0	.50
11	4.7	9.9	8.0	4.8	5.6	5.4	258	53	4.8	1.6	.90	.55
12	5.0	9.9	8.0	4.8	5.6	5.4	290	47	4.6	1.6	.90	.70
13	5.1	9.9	8.0	4.8	5.6	5.4	278	42	4.4	1.5	.90	.60
14	5.2	9.9	8.5	4.8	5.6	5.4	305	36	4.2	3.0	.90	.60
15	5.7	10	9.0	4.8	5.6	5.4	334	35	4.0	2.5	.90	.60
16	5.8	10	9.0	4.8	5.5	5.4	331	32	3.8	3.0	1.0	.60
17	5.7	11	9.5	4.8	5.5	5.4	281	30	3.6	3.5	1.0	.70
18	5.6	12	10	4.9	5.5	5.4	265	28	3.4	5.0	.90	.70
19	5.2	12	10	5.0	5.5	5.6	245	28	3.2	4.5	.90	.70
20	5.7	13	10	5.1	5.5	6.8	227	35	3.0	4.0	.80	.80
21	5.7	12	9.7	5.2	5.5	8.1	211	35	2.9	3.6	.80	.80
22	5.8	12	9.0	5.2	5.5	8.0	193	31	2.8	3.3	.80	.90
23	6.0	12	8.5	5.2	5.5	7.6	175	27	2.8	3.0	.70	.80
24	7.6	12	8.3	5.3	5.5	8.1	159	24	2.7	3.0	.70	.80
25	8.1	12	8.1	5.3	5.5	9.4	141	22	2.7	2.7	.70	.80
26	7.6	11	8.0	5.3	5.5	9.9	123	20	2.6	2.4	.60	.80
27	7.3	10	7.4	5.4	5.5	14	111	17	2.6	2.3	.60	.80
28	7.6	9.9	7.1	5.4	5.4	25	103	15	2.5	2.2	.60	.80
29	8.1	10	6.4	5.4	5.4	61	98	13	2.5	2.0	.50	.80
30	8.5	14	5.8	5.5	---	79	91	11	2.4	1.8	.50	.80
31	8.8	---	5.4	5.5	---	147	---	9.9	---	1.6	.45	---
TOTAL	192.4	311.8	293.7	154.0	160.7	486.7	7489	1303.9	131.3	78.0	27.05	19.45
MEAN	6.21	10.4	9.47	4.97	5.54	15.7	250	42.1	4.38	2.52	.87	.65
MAX	8.8	14	14	5.5	5.6	147	598	82	9.2	5.0	1.4	.90
MIN	4.6	8.3	5.4	4.3	5.4	5.4	91	9.9	2.4	1.5	.45	.40
AC-FT	382	618	583	305	319	965	14850	2590	260	155	54	39

CAL YR 1979 TOTAL 190087.70 MEAN 521 MAX 8450 MIN 3.4 AC-FT 377000
WTR YR 1980 TOTAL 10648.00 MEAN 29.1 MAX 598 MIN .40 AC-FT 21120

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to current year.
WATER TEMPERATURES: October 1975 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1974 to current year.

REMARKS.--No specific conductance or temperature record Oct. 1 to Dec. 30 and Feb. 1-29.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,700 micromhos Mar. 27, 1978; minimum daily, 310 micromhos May 10, 11, 1979.
WATER TEMPERATURES: Maximum daily, 25.0°C July 17, 18, 1978; minimum daily, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 306 mg/L May 22, 1975; minimum daily mean, 4 mg/L Feb. 14 to Mar. 17, 1978.
SEDIMENT LOADS: Maximum daily, 2,810 tons (2,550 metric tons) Apr. 9, 1976; minimum daily, <0.01 ton (<0.01 metric ton) on several days in 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed, 2,000 micromhos Mar. 2-3; minimum observed, 520 micromhos Apr. 10.
WATER TEMPERATURES: Maximum observed, 23.5°C July 9, minimum daily, 0.0°C on many days during winter months.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 50 mg/L Apr. 4-6, minimum daily, 8 mg/L Aug. 18 to Sept. 10.
SEDIMENT LOADS: Maximum daily, 81 tons (73 metric tons) Apr. 5; minimum daily, <0.01 ton (<0.01 metric ton) on several days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
OCT 11...	1700	4.9	1120	8.0	--	10.0	30	7.0	--	24	K10
NOV 06...	1215	8.6	1220	8.3	--	1.0	15	12.0	--	27	<5
DEC 05...	1150	12	1460	8.0	--	.5	10	10.6	--	32	K10
JAN 09...	1600	4.8	1650	7.6	--	.5	30	3.2	>22	35	K1
FEB 06...	1115	5.6	1790	7.6	--	.0	20	2.0	13	35	<2
MAR 05...	1315	5.3	1830	7.8	--	.5	15	3.6	25	39	K2
APR 10...	1445	237	520	--	--	1.0	--	--	--	--	--
15...	1715	335	735	--	--	7.0	--	--	--	--	--
30...	1445	94	1025	8.2	--	16.5	50	7.6	77	68	K20
JUN 04...	1600	6.6	1140	8.0	--	18.5	50	5.8	62	58	250
JUL 09...	1345	1.7	1130	8.3	26.5	23.5	--	7.8	91	55	K30
AUG 05...	1900	1.1	1100	8.0	--	19.5	30	8.1	88	79	120
SEP 03...	1820	.47	1120	8.0	--	15.5	25	5.9	59	19	K10

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT 11...	390	31	[illegible]	[illegible]	120	54	2.6	130	9.6	360	220
NOV 06...	410	40	95	42	120	38	2.6	130	8.5	370	200
DEC 05...	410	0	90	46	180	62	3.9	190	12	420	310
JAN 09...	490	0	110	52	200	60	3.9	210	11	510	350
FEB 06...	580	14	130	63	230	46	4.1	240	10	570	350
MAR 05...	580	0	130	63	240	47	4.3	250	11	610	370
APR 30...	290	60	60	34	120	46	3.1	130	12	230	270
JUN 04...	380	48	77	45	120	40	2.7	130	13	330	250
JUL 09...	--	--	--	--	--	--	--	--	--	--	--
AUG 05...	350	0	69	43	110	40	2.6	120	12	360	180
SEP 03...	340	4	67	43	120	42	2.8	130	11	340	180

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
OCT 11...	56	.3	9.0	748	760	1.02	9.90	26	.03	.02	.05
NOV 06...	76	.0	9.0	803	773	1.09	18.6	10	.02	.01	.03
DEC 05...	73	.3	8.2	1000	972	1.36	32.7	7	.03	.02	.05
JAN 09...	64	.3	11	1150	1110	1.56	14.9	--	.19	.02	.21
FEB 06...	73	.2	13	1230	1210	1.67	18.7	0	.20	.01	.21
MAR 05...	78	.3	15	1280	1280	1.74	18.6	0	.24	.01	.25
APR 30...	28	.3	6.5	719	670	.98	182	28	.02	.00	.02
JUN 04...	40	.3	13	776	757	1.06	13.8	72	.02	.01	.03
JUL 09...	--	--	--	--	--	--	--	10	.00	.00	.00
AUG 05...	60	.4	10	738	701	1.00	2.19	16	.02	.02	.04
SEP 03...	68	.2	9.1	717	703	.98	.91	10	.06	.01	.07

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS PO4) (00650)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)
OCT 11...	.02	.05	.06	.90	.95	1.0	4.4	.080	.15	.25
NOV 06...	.04	.02	.02	1.1	1.1	1.1	5.0	.050	.12	.15
DEC 05...	.03	.07	.08	.93	1.0	1.1	4.6	.050	.10	.15
JAN 09...	.21	.19	.23	1.3	1.5	1.7	7.6	.070	.15	.21
FEB 06...	.22	.46	.56	.94	1.4	1.6	7.1	.070	.15	.21
MAR 05...	.27	1.2	1.5	.40	1.6	1.9	8.2	.060	.06	.18
APR 30...	.03	.00	.00	1.2	1.2	1.2	5.4	.170	.31	.52
JUN 04...	.02	.18	.22	1.8	2.0	2.0	9.0	.230	.31	.71
JUL 09...	.00	.00	.00	1.8	1.8	1.8	8.0	.350	.58	1.1
AUG 05...	.05	.16	.19	1.1	1.3	1.3	5.9	.360	.64	1.1
SEP 03...	.07	.13	.16	2.3	2.4	2.5	11	.180	.37	.55

DATE	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE TOTAL (MG/L AS P) (70507)	PHOSPHORUS, HYDROLYZABLE TOTAL (MG/L AS P) (00669)	PHOSPHORUS, HYDRO. + ORTHO TOTAL (MG/L AS P) (00678)	PHOSPHORUS, ORGANIC TOTAL (MG/L AS P) (00670)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ALUMINUM, SUSPENDED RECOV. (UG/L AS AL) (01107)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)
OCT 11...	.040	.05	.03	.08	.00	160	160	0	3	1	2	200
NOV 06...	.020	.04	.00	.03	.02	--	--	--	--	--	--	--
DEC 05...	.060	.06	.00	.03	.02	--	--	--	--	--	--	--
JAN 09...	.030	.05	.01	.06	.01	--	--	--	--	--	--	--
FEB 06...	.060	.05	.02	.07	.00	--	--	--	--	--	--	--
MAR 05...	.030	.02	.03	.05	.01	--	--	--	--	--	--	--
APR 30...	.090	.10	.03	.13	.04	--	--	--	--	--	--	--
JUN 04...	.110	.10	.12	.22	.01	--	--	--	--	--	--	--
JUL 09...	.270	.19	.11	.30	.05	--	--	--	--	--	--	--
AUG 05...	.390	.21	.03	.24	.12	--	--	--	--	--	--	--
SEP 03...	.140	.12	.00	.11	.07	--	--	--	--	--	--	--

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	BORON, SUS-PENDED RECOV-ERABLE (UG/L AS B) (01021)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT 11...	0	200	0	0	0	250	10	240	0	0	0	0
NOV 06...	--	--	--	--	--	--	--	240	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	320	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	350	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	350	--	--	--	--
MAR 05...	--	--	--	--	--	--	--	370	--	--	--	--
APR 30...	--	--	--	--	--	--	--	280	--	--	--	--
JUN 04...	--	--	--	--	--	--	--	280	--	--	--	--
JUL 09...	--	--	--	--	--	--	--	260	--	--	--	--
AUG 05...	--	--	--	--	--	--	--	230	--	--	--	--
SEP 03...	--	--	--	--	--	--	--	240	--	--	--	--

DATE	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
OCT 11...	0	10	0	0	0	3	3	0	530	60	470	2

DATE	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)
OCT 11...	2	0	50	230	40	190	.0	.0	.0	1	1

DATE	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
OCT 11...	0	5	5	0	0	0	0	0	0	0	<1.0
NOV 06...	--	5	--	--	--	--	--	0	--	--	--
DEC 05...	--	10	--	--	--	--	--	10	--	--	--
JAN 09...	--	8	--	--	--	--	--	0	--	--	--
FEB 06...	--	8	--	--	--	--	--	0	--	--	--
MAR 05...	--	4	--	--	--	--	--	0	--	--	--
APR 30...	--	7	--	--	--	--	--	0	--	--	--
JUN 04...	--	8	--	--	--	--	--	0	--	--	--
JUL 09...	--	6	--	--	--	--	--	0	--	--	--
AUG 05...	--	5	--	--	--	--	--	0	--	--	--
SEP 03...	--	8	--	--	--	--	--	0	--	--	--

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS (UG/L) (32730)	PCB, TOTAL (UG/L) (39516)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)
OCT												
11...	10	0	10	.00	1	.0	--	.00	.0	.00	.00	.00
NOV												
06...	20	--	--	.00	5	--	--	--	--	--	--	--
DEC												
05...	0	--	--	.00	3	--	--	--	--	--	--	--
JAN												
09...	--	--	--	.00	3	.0	.00	.00	.0	.00	.00	.00
FEB												
06...	20	--	--	.00	1	--	--	--	--	--	--	--
MAR												
05...	30	--	--	.00	2	--	--	--	--	--	--	--
APR												
30...	40	--	--	.00	8	--	--	--	--	--	--	--
JUN												
04...	30	--	--	.00	2	--	--	--	--	--	--	--
JUL												
09...	20	--	--	.00	7	--	--	--	--	--	--	--
AUG												
05...	20	--	--	.00	3	.0	.00	.00	.0	.00	.00	.00
SEP												
03...	30	--	--	.01	4	--	--	--	--	--	--	--

DATE	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	TOTAL TRI-THION (UG/L) (39786)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)
OCT											
11...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
DEC											
05...	--	--	--	--	--	--	--	--	--	--	--
JAN											
09...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AUG											
05...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SEP											
03...	--	--	--	--	--	--	--	--	--	--	--

DATE	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	MIREX, TOTAL (UG/L) (39755)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT											
11...	.00	.00	.00	.00	.00	0	.03	.00	.00	19	.25
NOV											
06...	--	--	--	--	--	--	--	--	--	9	.21
DEC											
05...	--	--	--	--	--	--	--	--	--	16	.52
JAN											
09...	.00	.00	.00	.00	.00	0	.01	.00	.00	28	.36
FEB											
06...	--	--	--	--	--	--	--	--	--	10	.15
MAR											
05...	--	--	--	--	--	--	--	--	--	22	.32
APR											
30...	--	--	--	--	--	--	--	--	--	27	6.9
JUN											
04...	--	--	--	--	--	--	--	--	--	48	.86
JUL											
09...	--	--	--	--	--	--	--	--	--	19	.09
AUG											
05...	.00	.00	.00	.00	.00	0	.00	.00	.00	9	.03
SEP											
03...	--	--	--	--	--	--	--	--	--	8	.01

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				1400		1990	---	1930	1130	1190	1200	1230
2				1430		2000	---	1830	1130	1190	1200	1230
3				1430		2000	---	1700	1130	1190	1200	1230
4				1460		1950	---	1730	1130	1200	1230	1200
5				1450		1950	---	1730	1200	1190	1230	1120
6				1450		1900	---	1600	1200	1130	1230	1150
7				1450		1990	---	1600	1130	1130	1230	1200
8				1400		1950	---	1600	1150	1130	1200	1200
9				1480		1990	---	1430	1200	1200	1200	1150
10				1530		1990	---	1430	1190	1200	1200	1280
11				1480		1930	---	1430	1180	1200	1200	1280
12				1450		1930	---	1400	1230	---	1180	1200
13				1450		1930	---	1400	1230	---	1200	1250
14				1400		1930	---	1400	1130	1200	1200	1250
15				1480		1900	---	1430	1150	1130	1180	1250
16				1430		1900	---	1250	1130	1130	1230	1200
17				1430		1900	---	1250	1130	1180	1230	1200
18				1400		1900	---	1300	1190	1150	1230	1200
19				1400		1900	---	1250	1190	1200	1200	1200
20				1400		1930	---	1180	1190	1230	1300	1200
21				1400		1930	---	1180	1190	1230	1300	1200
22				1400		1930	---	1230	1200	1220	1280	1200
23				1430		1880	---	1230	1200	1200	1180	1200
24				1430		1880	---	1180	1130	1200	1200	1230
25				1400		1880	950	1150	1190	1200	1200	1230
26				1450		---	1030	1130	1130	1100	1200	1250
27				1450		---	1030	1100	1100	1250	1200	1200
28				1450		---	1000	1100	1190	1250	1230	---
29				1430		---	950	1150	1190	1250	1200	---
30				1450		---	950	1130	1190	1250	1200	---
31				1450		---	---	1130	---	1250	1200	---
MEAN				1430		1930	985	1370	1170	1190	1210	1210

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				1.0		.0	---	16.5	16.5	18.0	17.5	16.0
2				1.0		.0	---	16.5	17.0	18.0	17.5	16.0
3				1.5		.0	---	16.5	16.5	18.0	17.5	17.5
4				.5		.0	---	16.5	17.5	18.0	17.5	14.0
5				.0		1.0	---	16.5	18.0	17.5	17.5	14.0
6				.0		1.0	---	16.5	17.0	17.5	18.0	13.5
7				.0		1.0	---	16.0	18.0	17.0	18.0	14.0
8				.0		1.5	---	16.0	17.0	18.0	18.0	14.0
9				.0		2.0	---	16.0	17.0	18.0	17.0	13.0
10				.0		1.5	---	16.0	17.0	18.0	17.0	13.5
11				.0		2.5	---	16.0	17.5	18.0	16.5	13.5
12				.0		2.0	---	16.0	18.0	---	16.5	13.0
13				.0		2.0	---	17.0	18.0	---	16.5	14.0
14				.0		3.5	---	17.0	17.5	17.5	18.0	12.5
15				.0		3.0	---	17.5	17.5	17.5	17.5	12.5
16				.5		2.5	---	17.5	17.5	18.0	18.5	12.0
17				1.0		3.5	---	17.5	18.0	17.0	17.0	12.0
18				1.0		3.0	---	17.0	17.0	17.0	17.0	11.5
19				1.0		3.0	---	17.0	17.0	17.0	17.0	11.5
20				.5		3.0	---	16.0	17.0	17.0	17.0	11.0
21				.0		3.0	---	16.0	16.5	18.0	17.5	11.5
22				.0		3.5	---	16.0	16.5	17.5	18.5	11.5
23				.0		4.0	---	17.5	18.0	17.5	18.5	11.5
24				.0		4.0	---	17.5	16.5	17.5	18.0	11.5
25				.0		4.0	14.0	16.0	17.5	18.0	16.5	11.0
26				.0		---	14.0	16.5	17.0	18.5	16.5	11.0
27				.0		---	14.0	17.5	17.0	18.5	16.0	11.0
28				.0		---	15.0	16.5	18.0	18.5	16.0	---
29				.0		---	14.5	16.5	18.5	18.5	16.0	---
30				.0		---	16.0	16.5	17.0	18.0	16.0	---
31				.0		---	---	17.0	---	18.0	16.5	---
MEAN				.5		2.0	14.5	16.5	17.5	17.5	17.0	13.0

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	28	.47	18	.43	16	.60	20	.29	11	.16	20	.29
2	26	.41	16	.36	16	.56	20	.27	11	.17	22	.32
3	24	.36	14	.33	16	.56	20	.24	11	.17	22	.32
4	30	.60	12	.29	16	.52	20	.23	10	.15	22	.32
5	30	.58	10	.24	16	.52	20	.24	10	.15	22	.32
6	28	.43	9	.21	14	.45	20	.25	10	.15	22	.32
7	25	.34	9	.21	12	.39	20	.25	10	.15	22	.32
8	25	.34	9	.21	10	.30	20	.24	10	.15	22	.32
9	24	.32	10	.27	10	.30	20	.26	10	.15	22	.32
10	20	.25	10	.27	10	.27	20	.26	10	.15	22	.32
11	19	.24	10	.27	10	.22	20	.26	10	.15	22	.32
12	20	.27	10	.27	10	.22	20	.26	10	.15	22	.32
13	20	.28	10	.27	10	.22	20	.26	10	.15	22	.32
14	22	.31	10	.27	12	.28	20	.26	12	.18	22	.32
15	24	.37	10	.27	15	.36	20	.26	12	.18	22	.32
16	24	.38	10	.27	15	.35	20	.26	12	.18	22	.32
17	24	.37	11	.33	16	.41	20	.26	14	.21	22	.32
18	24	.36	12	.39	18	.49	20	.26	14	.21	22	.32
19	24	.34	12	.39	20	.54	20	.27	14	.21	22	.33
20	24	.37	12	.42	20	.54	20	.28	14	.21	25	.46
21	24	.37	12	.39	20	.52	18	.25	16	.24	25	.55
22	24	.38	12	.39	20	.49	18	.25	16	.24	25	.54
23	26	.42	12	.39	20	.46	16	.22	16	.24	25	.51
24	30	.62	12	.39	20	.45	16	.23	16	.24	25	.55
25	30	.66	12	.39	20	.44	16	.23	18	.27	25	.63
26	28	.57	12	.36	20	.43	14	.20	18	.27	25	.67
27	26	.51	12	.32	20	.40	14	.20	18	.27	25	.95
28	24	.49	12	.32	20	.38	14	.20	20	.29	25	1.7
29	22	.48	12	.32	20	.35	12	.17	20	.29	30	4.9
30	20	.46	14	.53	20	.31	12	.18	---	---	30	6.4
31	18	.43	---	---	20	.29	12	.18	---	---	30	12
TOTAL	---	12.78	---	9.77	---	12.63	---	7.47	---	5.73	---	35.92

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	30	13	27	6.0	35	.87	20	.13	10	.04	8	.00
2	30	14	27	5.5	40	.97	20	.12	9	.03	8	.01
3	30	14	26	5.8	45	.95	20	.12	9	.02	8	.00
4	50	70	26	5.8	48	.86	20	.11	9	.03	8	.00
5	50	81	26	5.3	45	.75	20	.11	9	.03	8	.01
6	50	63	25	4.7	40	.63	20	.10	9	.03	8	.01
7	45	47	25	4.5	35	.53	19	.09	9	.02	8	.01
8	45	36	25	4.2	30	.44	19	.09	9	.02	8	.01
9	40	29	24	4.0	25	.35	19	.09	9	.02	8	.01
10	35	22	24	3.7	20	.27	19	.09	9	.02	8	.01
11	35	24	24	3.4	20	.26	19	.08	9	.02	9	.01
12	35	27	23	2.9	20	.25	19	.08	9	.02	10	.02
13	35	26	23	2.6	20	.24	19	.08	9	.02	10	.02
14	40	33	23	2.2	20	.23	20	.16	9	.02	10	.02
15	44	40	22	2.1	20	.22	20	.14	9	.02	11	.02
16	44	39	22	1.9	20	.21	20	.16	9	.02	12	.02
17	42	32	22	1.8	20	.19	20	.19	9	.02	13	.02
18	40	29	21	1.6	20	.18	25	.34	8	.02	14	.03
19	40	26	21	1.6	20	.17	22	.27	8	.02	14	.03
20	38	23	25	2.4	20	.16	20	.22	8	.02	15	.03
21	38	22	25	2.4	20	.16	18	.17	8	.02	15	.03
22	36	19	22	1.8	20	.15	16	.14	8	.02	15	.04
23	36	17	20	1.5	20	.15	16	.13	8	.02	14	.03
24	34	15	20	1.3	20	.15	14	.11	8	.02	14	.03
25	34	13	20	1.2	20	.15	14	.10	8	.02	13	.03
26	32	11	20	1.1	20	.14	14	.09	8	.01	13	.03
27	32	9.6	20	.92	20	.14	12	.07	8	.01	13	.03
28	30	8.3	20	.81	20	.14	12	.07	8	.01	12	.03
29	30	7.9	25	.88	20	.14	12	.06	8	.01	12	.03
30	27	6.6	30	.89	20	.13	12	.06	8	.01	12	.03
31	---	---	30	.80	---	---	10	.04	8	.00	---	---
TOTAL	---	817.4	---	85.60	---	10.18	---	3.81	---	0.61	---	0.60

TOTAL LOAD FOR YEAR: 1002.50 TONS.

05115500 LAKE DARLING NEAR FOXHOLM, ND

LOCATION.--Lat 48°27'27", long 101°35'14", in NE¼NE¼ sec.1, T.157 N., R.85 W., Ward County, Hydrologic Unit 09010001, on control structure of Lake Darling Dam, reservoir of Fish and Wildlife Service, on Souris River about 6 mi (10 km) north of Foxholm, and at mile 430.0 (691.9 km).

DRAINAGE AREA.--9,450 mi^2 (24,480 km^2), approximately, of which about 6,200 mi^2 (16,100 km^2) is probably noncontributing.

PERIOD OF RECORD.--April 1936 to current year (no winter records 1936-39).

REVISED RECORDS.--WSP 1338: 1942. WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,577.00 ft (480.670 m) National Geodetic Vertical Datum of 1929. April 1936 to Aug. 8, 1963, nonrecording gages at same site and datum.

REMARKS.--Gage heights frequently affected by wind. Reservoir is formed by earth dam; storage began in April 1936; dam completed in July 1936. Usable capacity, 108,500 acre-ft (134 hm^3) between gage heights of 0.0 ft, sill of control gages, and 21.0 ft (6.40 m), crest of spillway. Dead storage, 3,500 acre-ft (4.32 hm^3). Figures given herein represent total contents based on capacity table dated June 7, 1943. Water is used during periods of low flow at wildlife refuge downstream.

COOPERATION.--Supplementary gage readings furnished by Fish and Wildlife Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 145,400 acre-ft (179 hm^3) Apr. 17, 1976, gage height, 24.24 ft (7.388 m); minimum observed since April 1943 when reservoir was first filled to spillway level, 31,200 acre-ft (38.5 hm^3) Feb. 18, 25, 1963, gage height, 10.04 ft (3.060 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 89,900 acre-ft (111 hm^3) Apr. 25, gage height, 18.66 ft (5.688 m); minimum, 73,500 acre-ft (90.6 hm^3) Sept. 11, gage height, 16.76 ft (5.108 m).

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	17.32	78,200	--
Oct. 31	17.15	76,800	-1,400
Nov. 30	16.98	75,300	-1,500
Dec. 31	17.02	75,700	+400
CAL YR 1979	--	--	-12,700
Jan. 31	*17.09	76,300	+600
Feb. 29	*17.05	75,900	-400
Mar. 31	*17.18	77,000	+1,100
Apr. 30	*18.26	86,300	+9,300
May 31	*17.98	83,800	-2,500
June 30	*17.68	81,300	-2,500
July 31	*16.93	74,900	-6,400
Aug. 31	16.94	75,000	+100
Sept. 30	16.85	74,200	-800
WTR YR 1980	--	--	-4,000

* Estimated.

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND

LOCATION.--Lat 48°22'20", long 101°30'18", in SW¼SE¼ sec.34, T.157 N., R.84 W., Ward County, Hydrologic Unit 09010001, on left bank 30 ft (9 m) upstream from county highway bridge, 3 mi (5 km) east of Foxholm, 19 mi (31 km) upstream from Des Lacs River, and at mile 414.5 (666.9 km).

DRAINAGE AREA.--9,470 mi² (24,530 km²), approximately, of which about 6,200 mi² (16,100 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1904 to November 1905, March to July 1906 (gage heights only), October 1936 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as Mouse River near Foxholm, 1904-6.

REVISED RECORDS.--WSP 1308: 1905. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,560.73 ft (475.711 m) National Geodetic Vertical Datum of 1929. June 23, 1904, to July 31, 1906, nonrecording gage at site 3.2 mi (5.1 km) upstream at different datum. Apr. 1, 1937, to Mar. 25, 1938, nonrecording gage at site 600 ft (180 m) downstream at datum about 0.5 ft (0.15 m) higher.

REMARKS.--Records fair. Flow almost completely regulated since 1936 by Lake Darling (station 05115500) 15 mi (24 km) upstream and several small reservoirs, combined capacity, about 184,000 acre-ft (227 hm³). Some small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--45 years, 150 ft³/s (4.248 m³/s), 108,700 acre-ft/yr (134 hm³/yr); median of yearly mean discharges, 65 ft³/s (1.84 m³/s), 47,100 acre-ft/yr (58 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,600 ft³/s (244 m³/s) Apr. 17, 1976, gage height, 17.17 ft (5.233 m); maximum reverse flow, 25 ft³/s (0.71 m³/s) Apr. 4, 1949 caused by backwater from the Des Lacs River; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 884 ft³/s (25.0 m³/s) Apr. 30, gage height, 9.42 ft (2.871 m); minimum daily, 0.38 ft³/s (0.011 m³/s) Oct. 7-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	6.1	3.0	4.2	3.8	3.8	3.8	70	3.8	4.8	12	6.9
2	2.1	5.4	3.2	4.2	3.8	3.8	3.8	72	3.8	4.8	12	6.9
3	2.3	5.4	4.2	4.2	3.8	4.2	4.2	98	3.8	4.8	12	7.3
4	1.6	5.4	4.5	4.2	3.8	4.5	4.5	119	3.2	4.8	13	7.3
5	1.3	6.1	4.5	4.2	3.8	4.5	4.5	119	3.2	5.1	12	6.9
6	.85	8.7	4.5	4.2	4.2	4.5	4.5	115	3.2	5.4	12	6.9
7	.38	8.7	4.5	4.2	3.8	4.5	4.8	112	3.2	5.1	12	6.6
8	.38	8.7	4.2	4.2	2.3	4.2	5.1	76	3.0	5.4	11	6.4
9	.38	8.7	4.2	3.5	1.6	4.2	4.2	6.1	3.0	5.1	11	6.4
10	.38	8.7	3.5	3.2	2.0	4.5	3.5	5.4	3.2	5.1	11	6.4
11	.38	6.9	3.5	3.2	2.0	4.5	3.8	5.1	3.2	5.1	10	6.9
12	.38	5.4	3.2	3.2	1.6	4.5	4.5	5.1	3.2	5.4	10	7.8
13	.72	4.8	3.5	3.2	.85	4.5	5.8	5.1	3.2	5.4	10	6.9
14	1.3	4.8	4.2	3.0	.85	4.5	7.8	5.1	3.2	5.4	10	6.9
15	2.0	4.2	5.8	2.8	.98	4.5	5.1	5.1	3.5	5.4	10	6.9
16	2.0	3.2	5.8	3.0	1.3	4.2	5.4	5.1	3.5	5.4	11	6.9
17	2.0	2.8	5.8	3.0	2.8	4.2	5.1	3.8	3.5	5.4	10	6.9
18	1.8	2.8	5.8	3.2	3.0	4.2	4.2	4.2	4.5	6.9	10	6.9
19	2.0	2.8	5.8	2.8	3.0	4.2	3.8	4.2	4.5	10	10	7.3
20	2.0	2.8	5.8	2.6	3.2	4.2	3.8	4.2	4.5	11	10	9.2
21	2.0	2.8	6.1	2.6	3.2	3.8	3.8	4.2	4.5	11	10	9.6
22	2.0	2.8	6.1	2.6	3.5	4.2	4.8	4.2	4.5	11	10	10
23	1.8	2.8	5.8	2.6	3.0	4.2	3.0	4.2	4.8	11	10	9.6
24	1.6	2.8	5.8	2.8	3.5	3.5	3.0	4.2	4.8	12	10	9.6
25	1.8	2.8	5.8	3.0	3.5	3.5	16	4.2	4.2	11	9.2	9.6
26	1.8	2.8	5.8	2.8	3.5	3.5	153	4.5	4.2	11	7.3	9.6
27	2.0	2.8	6.1	3.0	3.8	3.8	366	4.5	4.5	12	6.9	10
28	2.3	2.8	6.1	3.0	3.8	3.8	480	4.2	4.8	12	6.9	11
29	3.5	3.0	5.8	3.0	3.8	4.2	538	4.2	4.8	12	7.3	12
30	6.4	3.0	5.8	3.0	---	3.8	503	4.2	4.8	12	7.3	12
31	6.4	---	5.4	3.2	---	3.8	---	3.8	---	12	6.9	---
TOTAL	57.85	140.8	154.1	101.9	84.08	128.3	2162.8	885.9	116.1	242.8	310.8	243.4
MEAN	1.87	4.69	4.97	3.29	2.90	4.14	72.1	28.6	3.87	7.83	10.0	8.11
MAX	6.4	8.7	6.1	4.2	4.2	4.5	538	119	4.8	12	13	12
MIN	.38	2.8	3.0	2.6	.85	3.5	3.0	3.8	3.0	4.8	6.9	6.4
AC-FT	115	279	306	202	167	256	4290	1760	230	482	616	483

CAL YR 1979 TOTAL 206036.35 MEAN 564 MAX 5330 MIN .38 AC-FT 408700
WTR YR 1980 TOTAL 4628.83 MEAN 12.6 MAX 538 MIN .38 AC-FT 91[illegible]

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1972 to current year.
WATER TEMPERATURE: October 1972 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,320 micromhos Jan. 4, 5, 1974; minimum, 234 micromhos June 26, 1974.
WATER TEMPERATURES: Maximum, 28.0°C on several days during July 1974 and June 16, 1975; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,090 micromhos June 10-13; minimum, 559 micromhos Apr. 16.
WATER TEMPERATURES: Maximum, 26.5°C June 13; minimum, 1.0°C Feb. 21-24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIOCHEM UNINHIB 5 DAY (MG/L) (00310)
OCT 12...	1045	E.40	695	8.2	9.0	40	17	8.2	--	37	3.4
NOV 07...	1145	8.6	730	8.9	3.5	100	32	15.1	121	72	5.6
DEC 06...	1010	4.4	850	8.6	3.0	40	8.1	17.2	--	45	3.7
JAN 08...	1700	4.0	900	8.0	1.5	25	2.0	11.0	>77	37	1.3
FEB 07...	1020	4.2	980	7.9	2.0	15	4.5	10.0	70	41	1.0
MAR 06...	1300	4.3	950	7.7	1.5	15	3.7	7.6	54	48	1.6
APR 08...	1550	5.2	760	8.0	6.0	20	3.1	12.5	--	31	1.5
MAY 01...	1215	69	770	8.1	15.5	15	5.6	8.2	81	35	2.5
JUN 05...	1015	1.2	1070	8.2	19.5	45	17	5.4	59	48	2.6
JUL 08...	1315	E7.0	885	9.1	23.0	30	5.9	7.6	87	53	4.0
09...	1030	5.2	890	--	22.0	--	--	--	--	--	--
AUG 07...	1115	12	815	8.6	17.5	40	5.5	6.9	71	50	1.5
SEP 04...	1315	7.3	830	8.0	16.0	18	6.0	7.3	73	25	5.4
30...	1630	E12	835	--	14.5	--	--	--	--	--	--

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
OCT 12...	K360	230	39	52	24	58	46	1.7	71	13
NOV 07...	K470	260	68	57	28	67	48	1.8	81	14
DEC 06...	450	310	94	68	35	78	47	1.9	93	15
JAN 08...	K20	310	27	67	34	77	34	1.9	92	15
FEB 07...	K15	350	45	76	40	89	34	2.1	110	16
MAR 06...	K15	320	35	69	37	87	36	2.1	100	15
APR 08...	K4	260	41	55	30	69	35	1.9	82	13
MAY 01...	K360	280	65	59	31	69	34	1.8	82	13
JUN 05...	380	370	150	74	46	94	34	2.1	110	16
JUL 08...	250	280	100	48	39	95	41	2.5	110	14
09...	--	--	--	--	--	--	--	--	--	--
AUG 07...	K21	250	2	45	34	86	41	2.4	100	14
SEP 04...	K120	260	21	47	35	84	40	2.3	97	13
30...	--	--	--	--	--	--	--	--	--	--

E - Estimated.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
OCT										
12...	190	170	13	.3	4.6	458	451	.62	--	.26
NOV										
07...	190	210	13	.2	7.1	501	511	.68	11.6	.09
DEC										
06...	220	260	15	.2	7.7	588	612	.80	6.99	.21
JAN										
08...	280	190	17	.2	5.8	605	575	.82	6.53	.10
FEB										
07...	310	210	20	.2	7.9	686	647	.93	7.93	.34
MAR										
06...	290	210	21	.2	12	652	627	.89	7.62	.16
APR										
08...	220	170	14	.1	7.9	517	492	.70	7.33	.10
MAY										
01...	210	180	17	.2	8.6	531	504	.72	99.6	.01
JUN										
05...	220	350	20	.2	7.6	704	741	.96	2.28	.02
JUL										
08...	180	270	22	.3	5.1	655	602	.89	--	.02
09...	--	--	--	--	--	--	--	--	--	--
AUG										
07...	250	180	19	.3	1.8	562	531	.76	18.4	.00
SEP										
04...	240	190	17	.2	1.9	585	533	.80	11.5	.00
30...	--	--	--	--	--	--	--	--	--	--

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN,NH4 TOTAL IN BOT. MAT. (MG/KG AS N) (00611)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	NITRO- GEN,TOT IN BOT- TOM MA- TERIAL (MG/KG AS N) (00603)
OCT										
12...	.27	--	.77	--	1.4	2.2	--	2.5	11	--
NOV										
07...	.05	--	.18	--	3.2	3.4	--	3.5	15	--
DEC										
06...	.16	--	.13	--	2.2	2.3	--	2.5	11	--
JAN										
08...	.10	.5	.27	.1	1.8	2.1	474	2.2	9.7	475
FEB										
07...	.25	--	.26	--	.66	.92	--	1.3	5.6	--
MAR										
06...	.15	--	.43	--	1.4	1.8	--	2.0	8.7	--
APR										
08...	.10	--	.16	--	2.0	2.2	--	2.3	10	--
MAY										
01...	.00	--	.10	--	1.5	1.6	--	1.6	7.1	--
JUN										
05...	.01	--	.16	--	1.5	1.7	--	1.7	7.6	--
JUL										
08...	.00	--	.07	--	2.0	2.1	--	2.1	9.4	--
09...	--	--	--	--	--	--	--	--	--	--
AUG										
07...	.00	--	.04	--	1.8	1.8	--	1.8	8.0	--
SEP										
04...	.00	.0	.00	32	1.5	1.5	720	1.5	6.6	720
30...	--	--	--	--	--	--	--	--	--	--

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE DISSOL. (MG/L AS P) (00672)	PHOS-PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)
OCT 12...	.230	.13	.40	.09	--	380	7	--	0	0
NOV 07...	.280	.03	.09	--	--	--	--	--	--	--
DEC 06...	.140	.01	.03	--	--	--	--	--	--	--
JAN 08...	.080	.04	.12	--	420	300	--	5	300	0
FEB 07...	.080	.05	.15	--	--	--	--	--	--	--
MAR 06...	.090	.07	.21	--	--	--	--	--	--	--
APR 08...	.080	.01	.03	--	--	120	3	--	100	0
MAY 01...	.080	.02	.06	--	--	--	--	--	--	--
JUN 05...	.150	.03	.09	--	--	--	--	--	--	--
JUL 08...	.210	.19	.58	--	--	100	16	--	0	0
09...	--	--	--	--	--	--	--	--	--	--
AUG 07...	.520	.47	1.4	--	--	--	--	--	--	--
SEP 04...	.520	.47	1.4	--	450	100	12	7	0	0
30...	--	--	--	--	--	--	--	--	--	--

DATE	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	BORON, SUS-PENDED RECOV-ERABLE (UG/L AS B) (01021)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD) (01028)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 12...	180	10	170	0	--	10	--	0	--	5
NOV 07...	--	--	160	--	--	--	--	--	--	--
DEC 06...	--	--	180	--	--	--	--	--		--
JAN 08...	200	20	180	0	50	0	6	2	20	3
FEB 07...	--	--	210	--	--	--	--	--	--	--
MAR 06...	--	--	200	--	--	--	--	--	--	--
APR 08...	180	30	150	1	--	0	--	3	--	3
MAY 01...	--	--	160	--	--	--	--	--	--	--
JUN 05...	--	--	220	--	--	--	--	--	--	--
JUL 08...	200	10	190	0	--	0	--	0	--	8
AUG 07...	--	--	200	--	--	--	--	--	--	--
SEP 04...	190	30	160	0	1	10	6	0	10	3

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE) (01170)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB) (01052)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT 12...	--	--	820	810	<10	--	1	--	30	--
NOV 07...	--	--	--	--	<10	--	--	--	--	--
DEC 06...	--	--	--	--	<10	--	--	--	--	--
JAN 08...	--	1000	110	100	<10	6400	5	2000	40	--
FEB 07...	--	--	--	--	10	--	--	--	--	--
MAR 06...	--	--	--	--	20	--	--	--	--	--
APR 08...	--	--	250	240	10	--	2	--	40	--
MAY 01...	--	--	--	--	10	--	--	--	--	--
JUN 05...	--	--	--	--	10	--	--	--	--	--
JUL 08...	33	--	220	210	<10	--	25	--	50	0
AUG 07...	--	--	--	--	10	--	--	--	--	--
SEP 04...	--	13	350	320	30	6000	3	20	40	--

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01053)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT 12...	--	400	200	200	--	.0	--	3	2	1
NOV 07...	--	--	--	50	--	--	--	--	--	--
DEC 06...	--	--	--	250	--	--	--	--	--	--
JAN 08...	--	350	30	320	430	.1	.02	2	5	0
FEB 07...	--	--	--	410	--	--	--	--	--	--
MAR 06...	--	--	--	550	--	--	--	--	--	--
APR 08...	--	390	40	350	--	.0	--	6	6	0
MAY 01...	--	--	--	120	--	--	--	--	--	--
JUN 05...	--	--	--	580	--	--	--	--	--	--
JUL 08...	50	180	140	40	--	.0	--	4	22	0
AUG 07...	--	--	--	50	--	--	--	--	--	--
SEP 04...	--	120	50	70	420	.1	.04	3	10	0

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	CARBON, ORGANIC TOT. IN BOTTOM MAT. (G/KG AS C) (00687)	CARBON, INORGANIC, TOT IN BOT MAT (G/KG AS C) (00686)	CARBON, INORG + ORGANIC TOT. IN BOT MAT (G/KG AS C) (00693)	CYANIDE TOTAL (MG/L AS CN) (00720)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L) (38260)
OCT										
12...	--	10	--	17	1.4	--	--	--	.00	.00
NOV										
07...	--	--	--	--	--	--	--	--	--	.00
DEC										
06...	--	--	--	--	--	--	--	--	--	.00
JAN										
08...	0	--	26	71	.3	6.0	11	17	.00	.00
FEB										
07...	--	--	--	--	--	--	--	--	--	.00
MAR										
06...	--	--	--	--	--	--	--	--	--	.00
APR										
08...	--	20	--	15	.2	--	--	--	.00	.10
MAY										
01...	--	--	--	--	--	--	--	--	--	.10
JUN										
05...	--	--	--	--	--	--	--	--	--	.00
JUL										
08...	--	80	--	20	1.3	--	--	--	.00	.00
AUG										
07...	--	--	--	--	--	--	--	--	--	.00
SEP										
04...	0	20	25	--	--	--	9.1	--	.01	.00

DATE	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) (39250)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)
OCT										
12...	--	--	--	--	--	--	--	--	--	--
NOV										
07...	--	--	--	--	--	--	--	--	--	--
DEC										
06...	--	--	--	--	--	--	--	--	--	--
JAN										
08...	.0	0	.00	.00	.0	.0	0	.00	.0	.00
FEB										
07...	--	--	--	--	--	--	--	--	--	--
MAR										
06...	--	--	--	--	--	--	--	--	--	--
APR										
08...	--	0	--	.00	.0	--	0	--	.0	.00
SEP										
04...	.0	0	.00	.00	.0	.0	0	.00	.0	.00

DATE	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DIAZINON, TOTAL (UG/L) (39570)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG) (39571)	DIELDRIN TOTAL (UG/L) (39380)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDOSULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	PARATHION, TOTAL (UG/L) (39540)
OCT											
12...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
DEC											
06...	--	--	--	--	--	--	--	--	--	--	--
JAN											
08...	.0	.00	.0	.00	.0	.00	.0	.00	.00	.0	.00
FEB											
07...	--	--	--	--	--	--	--	--	--	--	--
MAR											
06...	--	--	--	--	--	--	--	--	--	--	--
APR											
08...	.0	--	.0	.00	.0	--	.0	--	--	.0	.00
SEP											
04...	.0	.00	.0	.00	.0	.00	.0	.00	.00	.0	.00
30...	--	--	--	--	--	--	--	--	--	--	--

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39399)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)
OCT 12...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 06...	--	--	--	--	--	--	--	--	--	--	--
JAN 08...	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00	.0
FEB 07...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	--	--	--	--	--	--	--	--	--	--	--
APR 08...	.0	.00	.0	.00	.0	.00	.0	--	.0	--	.0
MAY 01...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
JUL 08...	--	--	--	--	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--	--	--	--
SEP 04...	.0	.00	.0	.00	.0	.00	.0	.00	.0	.00	.0
30...	--	--	--	--	--	--	--	--	--	--	--

DATE	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)
OCT 12...	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--
DEC 06...	--	--	--	--	--	--	--	--	--	--
JAN 08...	.00	.0	.00	.0	.00	.0	.00	.0	.00	.00
FEB 07...	--	--	--	--	--	--	--	--	--	--
MAR 06...	--	--	--	--	--	--	--	--	--	--
APR 08...	.00	.0	--	.0	.00	.0	.00	.0	--	.00
MAY 01...	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--
JUL 08...	--	--	--	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--	--	--
SEP 04...	.00	.0	.00	.0	.00	.0	.00	.0	.00	.00
30...	--	--	--	--	--	--	--	--	--	--

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PER-THANE TOTAL (UG/L) (39034)	PCB, TOTAL (UG/L) (39516)	TOX-APHENE, TOTAL (UG/L) (39400)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39403)	2,4-D, TOTAL (UG/L) (39730)	2,4-D, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39731)	2,4,5-T TOTAL (UG/L) (39740)	2,4,5-T TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39741)	SILVEX, TOTAL (UG/L) (39760)	SILVEX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39761)
OCT 12...	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--
DEC 06...	--	--	--	--	--	--	--	--	--	--
JAN 08...	.00	.0	0	0	.06	0	.00	0	.00	.0
FEB 07...	--	--	--	--	--	--	--	--	--	--
MAR 06...	--	--	--	--	--	--	--	--	--	--
APR 08...	--	--	--	0	.03	0	.00	0	.00	.0
MAY 01...	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--
JUL 08...	--	--	--	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--	--	--
SEP 04...	.00	.0	0	0	.00	0	.07	0	.00	.0
30...	--	--	--	--	--	--	--	--	--	--

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	LENGTH OF EXPO-SURE (DAYS) (00022)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	IN-VERTE-BRATES, BENTHIC TOTAL (URG/SQ METER) (70943)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT 12...	370000	--	--	--	--	--	--	--	--	--
NOV 07...	2200000	--	--	--	--	--	--	--	66	1.5
DEC 06...	290000	.470	.320	29	66.4	2.26	.320	190	10	.12
JAN 08...	8000	--	--	--	--	--	--	--	2	.02
FEB 07...	4500	.320	.240	30	86.0	.930	.000	7	4	.05
MAR 06...	430	--	--	--	--	--	--	--	5	.06
APR 08...	1300	--	--	--	--	--	--	--	4	.06
MAY 01...	490	2.52	2.52	22	.00	4.84	1.72	95	8	1.5
JUN 05...	4400	--	--	--	--	--	--	--	28	.09
JUL 08...	3000	32.1	32.1	33	.00	27.3	.330	2	7	--
AUG 07...	1900	--	--	--	--	--	--	--	8	.26
SEP 04...	570	--	--	--	--	--	--	--	10	.20
30...	--	10.9	8.98	25	403	4.76	.730	1900	--	--

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	637	626	703	701	837	828	871	865	991	983	982	975
2	631	626	706	701	846	839	876	872	999	991	979	971
3	633	631	714	703	854	825	887	877	1000	995	975	971
4	638	631	722	711	856	846	894	891	998	994	976	968
5	640	636	727	719	852	845	899	895	994	987	968	957
6	645	641	730	722	850	837	900	896	990	983	957	950
7	646	621	733	727	845	828	901	897	986	979	949	939
8	648	641	728	720	839	832	900	894	985	971	942	934
9	651	646	722	719	837	830	900	897	975	972	937	930
10	656	649	723	718	834	828	904	897	976	972	929	922
11	661	654	719	714	835	832	910	897	976	972	922	915
12	661	652	723	715	840	833	917	907	980	973	917	914
13	661	657	724	719	840	834	924	917	981	977	913	910
14	664	657	731	720	848	838	931	923	988	981	909	902
15	666	662	735	730	856	846	934	931	989	985	905	902
16	669	664	737	734	866	856	941	934	993	989	901	894
17	669	666	743	738	878	871	941	937	1010	993	897	890
18	671	669	745	739	882	875	944	941	1010	1000	889	883
19	673	671	743	741	879	873	944	941	1030	1010	882	882
20	673	671	747	745	874	870	944	941	1030	1030	881	878
21	676	674	749	743	871	864	944	944	1030	1020	877	877
22	681	676	753	747	869	859	947	944	1020	1010	877	870
23	685	678	757	751	863	860	947	944	1010	995	869	866
24	688	683	770	756	864	857	947	947	1000	995	865	859
25	690	683	780	768	862	858	947	943	1000	992	858	855
26	693	688	788	779	863	859	947	943	996	988	857	854
27	695	688	799	787	860	857	947	943	989	981	857	853
28	698	693	804	801	858	855	950	943	985	982	853	853
29	706	698	815	802	859	855	965	953	986	978	852	842
30	713	706	832	813	860	856	976	965	---	---	845	832
31	714	703	---	---	864	861	984	976	---	---	831	822
MONTH	714	621	832	701	882	825	984	865	1030	971	982	822

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	821	809	783	767	1050	1030	917	902	851	838	829	826
2	811	808	782	767	1050	1040	920	905	843	839	832	826
3	811	804	779	766	1060	1050	919	893	844	841	832	822
4	810	801	810	782	1070	1060	919	907	839	833	835	828
5	800	797	822	806	1080	1060	914	907	831	825	841	831
6	802	796	815	803	1070	1060	910	899	833	826	841	834
7	795	792	827	809	1070	1050	902	894	834	825	837	831
8	792	782	857	830	1070	1060	903	887	840	831	844	834
9	786	771	867	853	1080	1070	894	878	840	833	---	---
10	799	783	876	866	1090	1080	908	892	830	821	---	---
11	808	796	883	869	1090	1080	930	910	827	821	---	---
12	812	803	879	876	1090	1080	939	928	827	821	---	---
13	806	785	882	872	1090	1080	947	934	823	817	---	---
14	786	626	885	872	1080	1080	949	935	820	805	---	---
15	687	644	892	878	1080	1070	947	937	820	814	---	---
16	641	559	899	885	1070	1060	935	920	814	786	---	---
17	646	568	909	895	1070	1050	930	927	801	795	---	---
18	680	644	909	898	1050	1040	925	918	801	795	---	---
19	691	671	920	905	1040	1020	920	913	797	791	---	---
20	711	689	919	909	1020	1010	916	908	800	794	---	---
21	735	709	930	908	1020	1000	913	906	803	791	---	---
22	742	732	930	908	1010	997	911	894	806	797	---	---
23	746	736	937	926	1000	981	903	896	809	800	---	---
24	753	742	948	937	984	968	898	884	809	803	---	---
25	835	749	963	948	971	959	889	879	809	802	---	---
26	831	781	971	959	967	943	884	874	815	808	---	---
27	780	740	987	971	946	935	872	863	818	802	---	---
28	766	752	998	986	934	926	864	858	817	802	---	---
29	770	756	1010	998	926	914	859	853	820	811	---	---
30	781	755	1020	1010	921	914	854	848	826	814	---	---
31	---	---	1030	1020	---	---	856	843	829	817	---	---
MONTH	835	559	1030	766	1090	914	949	843	851	786	844	822

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	14.0	12.5	3.5	2.5	4.0	4.0	3.0	2.5	1.5	1.5	1.5	1.5
2	13.5	12.0	2.5	1.5	4.0	3.5	2.5	2.5	1.5	1.5	1.5	1.5
3	12.5	11.5	2.0	1.5	3.5	3.5	2.5	2.5	1.5	1.5	1.5	1.5
4	12.0	10.5	3.0	2.0	3.5	3.5	2.5	2.5	1.5	1.5	1.5	1.5
5	12.0	11.0	3.0	2.5	3.5	3.0	2.5	2.5	1.5	1.5	1.5	1.5
6	11.5	10.0	3.0	2.5	3.0	3.0	2.5	2.0	1.5	1.5	1.5	1.5
7	11.5	11.0	3.0	2.5	3.5	3.0	2.0	2.0	1.5	1.5	1.5	1.5
8	11.5	10.5	2.5	2.5	3.0	3.0	2.0	1.5	1.5	1.5	1.5	1.5
9	11.0	9.5	2.5	2.0	3.5	3.0	2.0	1.5	1.5	1.5	1.5	1.5
10	11.5	10.0	2.5	2.0	3.5	3.0	2.0	2.0	1.5	1.5	2.0	1.5
11	11.5	11.0	2.5	2.5	3.5	3.0	2.0	2.0	1.5	1.5	2.5	1.5
12	11.0	9.0	3.0	2.5	3.5	3.5	2.5	2.0	1.5	1.5	2.0	1.5
13	9.0	8.0	3.0	3.0	3.5	3.0	2.5	2.0	1.5	1.5	2.0	1.5
14	9.0	7.5	3.0	3.0	3.5	3.0	2.5	2.0	1.5	1.5	2.0	1.5
15	10.0	8.5	3.5	3.0	3.5	3.0	2.0	2.0	2.0	1.5	2.0	2.0
16	10.5	9.5	3.5	3.0	3.0	2.0	2.0	2.0	2.0	1.5	2.0	2.0
17	9.5	8.5	3.5	3.0	2.0	1.5	2.0	2.0	2.0	2.0	2.0	2.0
18	9.5	8.5	3.5	3.0	2.0	2.0	2.0	2.0	2.0	1.5	2.5	2.0
19	9.0	8.0	3.5	3.5	2.5	2.0	2.0	2.0	1.5	1.5	2.5	2.0
20	8.5	8.0	4.0	3.5	2.5	2.5	2.5	2.0	1.5	1.5	2.5	2.5
21	8.0	7.0	4.0	3.5	3.0	2.5	2.0	2.0	1.5	1.0	3.0	2.5
22	7.0	6.0	5.5	3.5	3.0	2.5	2.0	2.0	1.5	1.0	3.0	2.5
23	6.0	5.0	5.0	4.0	3.0	3.0	2.0	2.0	1.5	1.0	3.0	2.5
24	5.5	4.0	4.5	4.5	3.0	3.0	2.0	2.0	1.5	1.0	3.0	2.5
25	5.0	4.0	4.5	4.0	3.0	2.5	2.0	2.0	1.5	1.5	3.0	2.5
26	5.0	4.0	5.0	4.0	3.0	2.5	2.0	2.0	1.5	1.5	3.0	3.0
27	5.5	4.5	4.5	4.0	3.0	3.0	2.0	2.0	1.5	1.5	3.5	3.0
28	6.5	5.5	4.0	3.5	3.0	3.0	2.0	2.0	1.5	1.5	3.5	3.5
29	6.0	5.5	4.0	4.0	3.0	3.0	2.0	2.0	1.5	1.5	4.0	3.5
30	6.0	5.0	4.0	3.5	3.0	3.0	2.0	1.5	---	---	4.5	4.0
31	5.0	4.0	---	---	3.0	2.5	1.5	1.5	---	---	5.0	4.5
MONTH	14.0	4.0	5.5	1.5	4.0	1.5	3.0	1.5	2.0	1.0	5.0	1.5

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	5.5	4.5	18.0	15.0	21.0	19.5	21.0	18.0	21.5	21.0	17.0	15.5
2	5.5	5.0	19.0	16.5	20.0	19.0	22.0	19.0	21.0	20.5	17.0	15.5
3	6.0	5.5	19.5	15.5	20.0	19.0	23.5	19.5	21.5	21.0	17.5	15.5
4	6.5	6.0	20.0	17.0	20.0	19.0	23.5	21.0	21.0	18.0	18.5	16.5
5	6.5	6.0	18.5	17.0	22.5	19.0	21.5	20.5	18.0	17.0	20.0	17.0
6	6.5	6.5	17.0	15.0	21.0	19.5	23.5	21.0	18.0	17.5	19.5	17.0
7	6.5	6.5	14.5	12.5	20.0	17.0	25.0	22.0	19.0	17.5	18.0	16.5
8	---	---	14.5	11.5	20.5	18.0	23.0	22.0	20.5	18.0	17.0	16.0
9	---	---	15.0	13.5	21.5	18.5	24.0	21.5	19.0	18.5	---	---
10	5.5	4.5	15.0	12.0	21.0	19.0	23.5	22.0	19.5	18.5	---	---
11	6.0	5.5	15.5	12.0	22.0	19.5	26.0	22.0	21.0	18.5	---	---
12	7.0	6.0	15.5	13.0	23.5	21.0	24.0	23.0	19.5	19.5	---	---
13	8.0	6.5	14.5	12.5	26.5	21.5	25.0	22.0	21.0	19.0	---	---
14	8.5	5.5	14.5	13.0	24.5	21.5	25.5	23.5	19.5	18.5	---	---
15	8.0	5.0	15.0	13.5	21.5	20.0	24.5	22.5	20.0	19.0	---	---
16	8.5	7.0	16.5	15.0	23.0	19.5	24.0	21.5	19.5	17.0	---	---
17	11.0	7.5	18.5	16.0	22.5	21.0	22.0	21.0	21.5	18.0	---	---
18	13.0	10.5	18.5	16.5	20.5	18.5	22.5	20.5	21.0	18.5	---	---
19	14.0	12.0	20.0	17.5	20.5	18.5	21.5	20.5	19.5	18.0	---	---
20	15.0	13.0	20.5	18.5	23.0	19.5	21.5	20.0	18.5	17.5	---	---
21	18.0	14.0	21.5	19.5	23.0	21.0	21.5	20.0	19.0	18.0	---	---
22	18.0	15.0	22.0	20.0	23.5	21.5	23.0	20.5	20.0	18.5	---	---
23	16.5	14.0	22.0	20.0	24.0	22.0	24.0	21.5	20.0	18.0	---	---
24	16.5	13.5	21.5	19.5	24.5	22.5	24.0	23.0	18.0	16.5	---	---
25	16.5	13.5	22.0	20.0	25.0	22.0	23.5	21.5	17.5	16.5	---	---
26	16.0	13.0	22.0	20.0	23.5	20.0	23.0	21.5	18.5	17.0	---	---
27	16.5	13.5	21.0	19.5	20.0	18.5	22.5	22.0	18.0	17.0	---	---
28	16.5	14.0	21.0	20.0	18.5	16.5	22.5	21.5	17.5	16.5	---	---
29	16.5	15.0	23.0	19.5	17.5	15.5	23.0	21.5	17.0	16.5	---	---
30	16.5	15.0	21.0	19.5	20.5	16.5	22.5	21.0	17.0	16.0	---	---
31	---	---	21.0	20.0	---	---	23.5	21.0	17.0	16.0	---	---
MONTH	18.0	4.5	23.0	11.5	26.5	15.5	26.0	18.0	21.5	16.0	20.0	15.5

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MG/L	DEGREES, C	SATURATION, %
Nov. 6, 1979			
2100	16.4	3.5	130
2200	16.4	3.5	130
2300	16.2	3.5	129
2400	16.1	3.5	128
Nov. 7, 1979			
0100	15.7	3.5	125
0200	15.7	3.5	126
0300	15.7	3.5	126
0400	15.6	3.5	125
0500	15.4	3.5	123
0600	15.3	3.5	122
0700	15.2	3.5	122
0800	15.1	3.5	121
0900	15.2	3.5	122
1000	15.0	3.5	120
1100	15.1	3.5	121
1200	15.1	3.5	121
1300	15.1	3.5	121
1400	15.1	3.5	121
1500	15.2	3.5	122
1600	15.1	3.0	119
1700	15.2	3.0	120
1800	15.1	2.5	117
1900	15.0	2.5	116
Jan. 7, 1980			
1700	11.2	1.5	79
1800	11.2	1.5	79
1900	11.2	1.5	79
2000	11.2	1.5	79
2100	11.2	1.5	79
2200	11.2	1.5	79
2300	11.2	1.5	79
2400	11.2	1.5	79
Jan. 8, 1980			
0100	11.2	1.5	79
0200	11.2	1.5	79
0300	11.2	1.5	79
0400	11.2	1.5	79
0500	11.1	1.5	78
0600	11.1	1.5	78
0700	11.1	1.5	78
0800	11.1	1.5	78
0900	11.1	1.5	78
1000	11.1	1.5	78
1100	11.1	1.5	78
1200	11.2	1.5	79
1300	11.2	1.5	79
1400	11.2	1.5	79
1500	11.1	1.5	78
1600	11.0	1.5	77
1700	11.0	1.5	77
Apr. 18, 1980			
1200	12.7	5.5	99
1300	12.4	6.0	98
1400	12.4	6.0	98
1500	12.5	6.0	99
1600	12.5	6.0	99
1700	12.6	6.0	100
1800	12.7	5.5	99
1900	12.7	5.5	99
2000	12.8	5.0	98
2100	12.9	4.5	98
2200	12.9	4.5	98
2300	13.0	4.5	99
2400	13.0	4.5	99
Apr. 19, 1980			
0100	13.0	4.5	99
0200	12.9	4.0	97
0300	12.8	4.0	96
0400	12.7	3.5	94
0500	12.6	3.5	94
0600	12.5	3.0	92
0700	12.4	3.0	91
0800	12.4	3.0	91
0900	12.5	3.5	93
1000	12.5	4.0	95
1100	12.6	4.0	95
1200	12.6	4.0	95
July 8, 1980			
1100	7.3	22.5	83
1200	7.4	22.5	84
1300	7.6	22.5	86
1400	7.6	22.5	86
1500	7.7	22.5	88
1600	7.6	22.5	86
1700	7.7	22.5	88
1800	8.1	22.5	92
1900	8.8	23.0	101
2000	9.1	23.0	105
2100	8.6	22.5	98
2200	7.9	22.5	89
2300	7.6	22.5	86
2400	7.3	22.5	83
July 9, 1980			
0100	6.9	22.5	78
0200	6.5	22.5	74
0300	6.3	22.5	72
0400	6.0	22.0	68
0500	5.8	22.0	66
0600	5.7	22.0	65
0700	5.6	22.0	64
0800	5.6	22.0	64
0900	5.9	22.0	67
1000	5.4	22.0	61
Sept. 4, 1980			
1100	6.9	15.5	68
1200	7.1	15.5	70
1300	7.3	15.5	72
1400	7.3	16.0	73
1500	7.5	16.5	76
1600	7.7	16.5	78
1700	7.8	17.0	80
1800	8.1	17.5	84
1900	8.4	17.5	87
2000	8.5	17.5	88
2100	8.6	17.5	89
2200	8.7	17.5	90
2300	8.7	17.0	89
2400	8.5	17.0	87
Sept. 5, 1980			
0100	8.4	17.0	86
0200	8.3	17.0	85
0300	8.4	17.0	86
0400	8.3	16.5	84
0500	8.1	16.5	82
0600	7.9	16.0	79
0700	7.9	16.0	79
0800	7.8	16.0	78
0900	7.8	16.0	78
1000	7.6	16.0	76
1100	7.6	16.0	76

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 12,79	NOV 7,79	DEC 6,79	JAN 8,80	FEB 7,80	MAR 6,80
TIME	1045	1145	1010	1700	1020	1300
TOTAL CELLS/ML	370000	2200000	290000	8000	4500	430
DIVERSITY: DIVISION	0.0	0.0	0.1	0.4	0.6	1.8
.CLASS	0.0	0.0	0.1	0.4	0.6	1.8
..ORDER	0.0	0.0	0.1	0.5	0.8	1.9
...FAMILY	0.0	0.0	0.1	0.5	1.4	2.3
....GENUS	0.0	0.0	0.1	0.5	1.4	2.3

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	55	1	150	3	72#	17
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	--	-	--	-	--	-	--	-	--	-
....CHLORELLA	370000#	99	--	-	--	-	7400#	92	3500#	77	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	*	0	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	1900	1	--	-	--	-	--	-	170	4	57	13
....TETRASTRUM	--	-	--	-	--	-	--	-	99	2	--	-
..TETRASPORALES												
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	99	2	14	3
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	--	-	--	-	--	-	--	-
....PTEROMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	--	-	--	-	200	3	25	1	--	-
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	300	7	--	-
...FRAGILARIACEAE												
....ASTERIONELLA	--	-	--	-	2800	1	220	3	25	1	--	-
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	--	-	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	--	-	--	-	--	-	--	-	--	-	--	-
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-	14	3
...OCHROMONADACEAE												
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...SYNURACEAE												
....SYNURA	--	-	--	-	--	-	--	-	--	-	29	7
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	190#	43
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	150	3	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	2200000#	100	288000#	99	--	-	--	-	57	13
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-	25	1	--	-
...PETALOMONADACEAE												
....CALYCOMONAS	--	-	--	-	--	-	55	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM, EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 8,80	MAY 1,80	JUN 5,80	JUL 8,80	AUG 7,80	SEP 4,80
TIME	1550	1215	1015	1315	1115	1315
TOTAL CELLS/ML	1300	490	4400	3000	1900	570
DIVERSITY: DIVISION	1.9	0.9	1.4	2.1	1.5	1.6
.CLASS	1.9	0.9	1.4	2.3	1.5	1.6
..ORDER	2.2	1.8	1.8	2.4	1.7	2.1
...FAMILY	2.6	2.4	2.6	2.5	2.3	2.7
....GENUS	2.6	2.4	2.9	2.6	2.3	2.8

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	250#	19	170#	34	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	100#	21	150	3	--	-	--	-	--	-
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	13	2
....KIRCHNERIELLA	--	-	--	-	530	12	26	1	--	-	--	-
....OOCYSTIS	--	-	--	-	190	4	230	8	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	26	5
....TETRAEDRON	13	1	--	-	38	1	51	2	13	1	13	2
...SCENEDESMACEAE												
....SCENEDESMUS	--	-	--	-	490	11	51	2	--	-	52	9
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	130#	26	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	13	1	--	-	530	12	--	-	--	-	140#	25
...PHACOTACEAE												
....PHACOTUS	--	-	--	-	75	2	--	-	--	-	--	-
....PTEROMONAS	--	-	--	-	--	-	--	-	13	1	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	65	5	26	5	260	6	51	2	--	-	13	2
....MELOSIRA	--	-	--	-	--	-	--	-	350#	19	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	13	3	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....ASTERIONELLA	26	2	--	-	--	-	--	-	--	-	--	-
....FRAGILARIA	65	5	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	52	4	--	-	--	-	--	-	13	1	--	-
...NITZSCHIACEAE												
....NITZSCHIA	100	8	13	3	--	-	100	3	--	-	13	2
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	26	1	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	38	1	--	-	--	-	--	-
...OCHROMONADACEAE												
....OCHROMONAS	--	-	--	-	--	-	920#	31	--	-	--	-
...SYNURACEAE												
....SYNURA	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	13	1	26	5	1500#	33	--	-	210	11	130#	23
...CRYPTOMONADACEAE												
....CRYPTOMONAS	230#	18	--	-	600	14	970#	33	39	2	100#	18
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	480#	37	--	-	--	-	26	1	26	1	65	11
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	260	9	310#	17	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	830#	44	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	13	3	--	-	--	-	26	1	--	-
....PHACUS	--	-	--	-	38	1	26	1	--	-	--	-
....TRACHELOMONAS	--	-	--	-	38	1	230	8	39	2	--	-
...PETALOMONADACEAE												
....CALYCOMONAS	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

FEB. 7, 1980
1020 HOURS

PERIPHYTON IDENTIFICATION

ORGANISM NAME	COMMON NAME
CHRYSOPHYTA	
.BACILLARIOPHYCEAE	DIATOMS
..PENNALES	PENNATE
...FRAGILARIACEAE	
& ....FRAGILARIA	
....SYNEDRA	
...GOMPHONEMATACEAE	
& ....GOMPHONEMA	
...NITZSCHIACEAE	
....NITZSCHIA	

NOTE: & - ESTIMATED DOMINANT ORGANISM: NOT ACTUALLY COUNTED
SAMPLING METHOD: PLASTIC SLIDES, TIMED SAMPLING INTERVAL
ANALYSIS METHOD: SLIDE MOUNTING, INVERTED MICROSCOPE

MAY 1, 1980
1215 HOURS

PERIPHYTON IDENTIFICATION

ORGANISM NAME	COMMON NAME
CHLOROPHYTA	GREEN ALGAE
.CHLOROPHYCEAE	
..CHLOROCOCCALES	
...OOCYSTACEAE	
....ANKISTRODESMUS	
..OEDOGONIALES	
...OEDOGONIACEAE	
& ....OEDOGONIUM	
..ULOTRICHALES	
...COLEOCHAETACEAE	
....COLEOCHAETE	
..VOLVOCALES	
...CHLAMYDOMONADACEAE	
....CARTERIA	
..ZYGNEMATALES	
...ZYGNEMATACEAE	
....MOUGEOTIA	
CHRYSOPHYTA	
.BACILLARIOPHYCEAE	DIATOMS
..CENTRALES	CENTRIC
...COSCINODISCACEAE	
....CYCLOTELLA	
..PENNALES	PENNATE
...ACHNANTHACEAE	
....COCCONEIS	
....RHOICOSPHENIA	
...CYMBELLACEAE	
....CYMBELLA	
...EUNOTIACEAE	
....EUNOTIA	
...FRAGILARIACEAE	
....FRAGILARIA	
....SYNEDRA	
...GOMPHONEMATACEAE	
....GOMPHONEMA	
...NAVICULACEAE	NAVICULOID
....NAVICULA	
...NITZSCHIACEAE	
....NITZSCHIA	
CYANOPHYTA	BLUE-GREEN ALGAE
.CYANOPHYCEAE	
..HORMOGONALES	FILAMENTOUS BL-GREEN
...OSCILLATORIACEAE	
....OSCILLATORIA	

NOTE: & - ESTIMATED DOMINANT ORGANISM: NOT ACTUALLY COUNTED
SAMPLING METHOD: TEN PICKED ROCKS, RANDOM
ANALYSIS METHOD: SLIDE MOUNTING, INVERTED MICROSCOPE

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

JULY 8, 1980
1315 HOURS

PERIPHYTON IDENTIFICATION

	ORGANISM NAME	COMMON NAME
	CHLOROPHYTA	GREEN ALGAE
	.CHLOROPHYCEAE	
	..OEDOGONIALES	
	...OEDOGONIACEAE	
	....OEDOGONIUM	
	..ULOTRICHALES	
	...COLEOCHAETACEAE	
	....COLEOCHAETE	
	..ZYGNEMATALES	
	...ZYGNEMATACEAE	
	....SPIROGYRA	
	CHRYSOPHYTA	
	.BACILLARIOPHYCEAE	DIATOMS
	..CENTRALES	CENTRIC
	...COSCINODISCACEAE	
	....MELOSIRA	
	..PENNALES	PENNATE
	...ACHNANTHACEAE	
	....COCCONEIS	
	....RHOICOSPHENIA	
	...CYMBELLACEAE	
	....CYMBELLA	
	....EPITHEMIA	
	....RHOPALODIA	
	...FRAGILARIACEAE	
	....FRAGILARIA	
	....SYNEDRA	
	...GOMPHONEMATACEAE	
	....GOMPHONEMA	
	...NAVICULACEAE	NAVICULOID
	....NAVICULA	
	...NITZSCHIACEAE	
&	....NITZSCHIA	
	CYANOPHYTA	BLUE-GREEN ALGAE
	.CYANOPHYCEAE	
	..HORMOGONALES	FILAMENTOUS BL-GREEN
	...OSCILLATORIACEAE	
&	....OSCILLATORIA	
	...RIVULARIACEAE	
	....CALOTHRIX	
	EUGLENOPHYTA	EUGLENOIDS
	.EUGLENOPHYCEAE	
	..EUGLENALES	
	...EUGLENACEAE	
	....TRACHELOMONAS	

NOTE: & - ESTIMATED DOMINANT ORGANISM: NOT ACTUALLY COUNTED
ANALYSIS METHOD: SLIDE MOUNTING, INVERTED MICROSCOPE

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

BENTHIC INVERTEBRATE ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	DEC 6,79	FEB 7,80	MAY 1,80	JUL 8,80	SEP 30,80
TIME	1010	1020	1215	1315	1630
TOTAL COUNT	28	1	14	293	276
DIVERSITY: PHYLUM	1.1	0.0	0.4	1.4	0.1
.CLASS	1.7	0.0	0.4	1.6	0.5
..ORDER	2.0	0.0	1.6	0.0	1.1
...FAMILY	0.0	0.0	0.0	0.0	0.0
....GENUS	0.0	0.0	0.0	0.0	0.0
....GENUS-INSECTA	0.0	0.0	0.0	0.0	0.0

ORGANISM	COUNT	COUNT	COUNT	COUNT	COUNT
ANNELIDA					
.OLIGOCHAETA					
..PLESIOPORA					
...NAIDIDAE	--	--	--	150	--
ARTHROPODA (ARTHROPODS)					
.CRUSTACEA					
..AMPHIPODA	7	--	--	--	--
...TALITRIDAE					
....HYALLELA	--	--	--	--	24
.....H.AZTECA	--	--	--	6	--
..PODOCOPA	--	--	--	4	--
.INSECTA					
..COLEOPTERA					
...PSEPHENIDAE	--	--	3	--	--
..DIPTERA					
...CHIRONOMIDAE	8	--	2	46	25
..EPHEMEROPTERA	2	1	--	--	--
...CAENIDAE					
....CAENIS	--	--	--	2	--
...HEPTAGENIIDAE					
....STENACRON	--	--	--	21	2
..HEMIPTERA					
...CORIXIDAE	--	--	--	--	1
..ODONATA	--	--	--	--	1
..TRICHOPTERA	--	--	8	--	--
...HYDROPSYCHIDAE					
....CHEUMATOPSYCHE	--	--	--	--	17
...HYDROPTILIDAE					
....AGRAYLEA	--	--	--	--	129
....HYDROPTILA	--	--	--	--	74
...POLYCENTROPODIDAE					
....POLYCENTROPUS	--	--	--	41	--
CNIDARIA (CNIDARIANS)					
.HYDROZOA					
..HYDROIDA					
...HYDRIDAE					
....HYDRA	--	--	--	13	--
ECTOPROCTA (BRYOZOANS)					
.PHYLACTOLAEMATA	--	--	--	1	--
MOLLUSCA (MOLLUSCS)					
.BIVALVIA					
..NUCULOIDEA					
...SPHAERIIDAE	--	--	1	--	--
.GASTROPODA					
..BASOMMATOPHORA					
...ANCYLIDAE	1	--	--	--	--
....FERRISSIA	--	--	--	9	--
...PHYSIDAE	9	--	--	--	--
....PHYSA	--	--	--	--	3
NEMATODA (NEMATODES)					
.UNKNOWN CLASS					
..UNKNOWN ORDER	1	--	--	--	--

05116500 DES LACS RIVER AT FOXHOLM, ND

LOCATION.--Lat 48°22'14", long 101°34'11", in NW¼NE¼NW¼ sec.2, T.156 N., R.85 W., Ward County, Hydrologic Unit 09010002, on left bank 200 ft (60 m) upstream from county highway bridge in Foxholm, and at mile 23.0 (37.0 km).

DRAINAGE AREA.--939 mi² (2,432 km²), of which about 400 mi² (1,040 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1904 to July 1906, October 1945 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,632.98 ft (497.732 m) National Geodetic Vertical Datum of 1929. June 14 to Oct. 23, 1955, nonrecording gage at site 200 ft (60 m) downstream from present gage at same datum. See WSP 1728 or 1913 for history of changes prior to June 14, 1955.

REMARKS.--Records fair. Some regulation at low flow by a series of wildlife refuge ponds, beginning about 53 mi (85 km) upstream, combined capacity about 64,000 acre-ft (79 hm³). Some small diversions for irrigation above station.

AVERAGE DISCHARGE.--37 years, 32.1 ft³/s (0.909 m³/s), 23,260 acre-ft/yr (28.7 hm³/yr); median of yearly mean discharges, 17 ft³/s (0.48 m³/s), 12,300 acre-ft/yr (15 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,260 ft³/s (121 m³/s) Apr. 19, 1979, gage height, 21.23 ft (6.471 m), from highwater mark; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 230 ft³/s (6.51 m³/s) June 5, gage height, 6.83 ft (2.082 m); minimum daily, 0.48 ft³/s (0.014 m³/s) Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	26	14	8.5	3.9	2.7	7.5	20	7.0	3.7	.90	1.1
2	49	27	18	8.0	3.8	2.7	8.0	21	6.3	3.0	.80	1.2
3	48	28	17	7.5	3.7	2.7	28	22	5.6	2.8	.80	1.2
4	50	25	18	6.0	3.6	2.7	30	22	5.7	2.8	.80	1.3
5	50	24	19	5.5	3.6	2.6	35	21	77	2.4	.80	1.3
6	48	23	19	6.0	3.5	2.6	50	21	103	2.2	.93	1.2
7	49	25	18	6.0	3.4	2.6	40	21	18	2.8	.76	.82
8	48	30	16	6.0	3.4	2.6	25	21	12	1.9	.73	.61
9	46	28	15	6.0	3.4	2.6	30	21	9.2	1.6	.69	.48
10	46	29	14	6.0	3.4	2.6	30	21	7.2	1.4	.97	.53
11	48	30	14	5.8	3.3	2.6	55	20	5.8	1.3	1.0	.65
12	46	28	14	5.8	3.3	2.6	66	19	5.6	1.3	.99	3.1
13	45	28	14	5.8	3.3	2.6	33	18	5.2	1.3	.96	2.9
14	45	27	13	5.8	3.2	2.6	70	18	4.3	1.3	.99	2.1
15	43	28	13	5.8	3.2	2.6	46	18	3.4	1.2	.92	1.6
16	42	28	12	5.8	3.2	2.7	50	18	3.0	1.2	2.0	3.7
17	42	30	12	5.8	3.1	2.7	46	19	2.9	1.2	3.8	3.2
18	40	26	11	5.8	3.1	2.8	41	18	3.2	1.2	2.8	3.5
19	39	28	11	5.8	3.1	2.9	34	17	3.3	1.1	2.4	2.9
20	40	19	11	5.4	3.1	3.0	31	17	3.0	1.1	2.1	3.2
21	36	26	11	5.4	3.1	3.2	29	17	3.2	1.1	2.2	3.4
22	36	19	10	5.4	3.1	4.4	27	16	3.3	1.1	2.2	1.7
23	37	24	10	5.4	3.0	4.6	25	14	3.4	1.0	1.4	1.6
24	35	24	10	5.4	3.0	4.4	24	13	3.7	1.0	1.2	1.5
25	32	22	10	5.2	2.9	4.6	22	11	4.0	1.0	1.0	1.7
26	31	21	10	5.0	2.9	4.8	21	9.2	4.3	1.0	1.1	1.4
27	31	18	10	4.8	2.9	5.0	20	8.5	3.9	1.0	1.2	1.1
28	30	18	10	4.6	2.9	5.4	19	7.9	3.9	.90	1.1	2.0
29	30	17	9.5	4.4	2.8	6.2	19	7.3	4.4	.90	.91	1.8
30	29	13	9.5	4.2	---	6.8	19	7.1	4.2	.90	.95	.96
31	29	---	9.0	4.0	---	7.0	---	7.0	---	.90	1.0	---
TOTAL	1269	741	402.0	176.5	94.2	109.9	980.5	511.0	329.0	47.60	40.40	53.73
MEAN	40.9	24.7	13.0	5.69	3.25	3.55	32.7	16.5	11.0	1.54	1.30	1.79
MAX	50	30	19	8.5	3.9	7.0	70	22	103	3.7	3.8	3.7
MIN	29	13	9.0	4.0	2.8	2.6	7.5	7.0	2.9	.90	.69	.48
AC-FT	2520	1470	797	350	187	218	1940	1010	653	94	80	107

CAL YR 1979 TOTAL 32895.36 MEAN 90.1 MAX 3100 MIN .01 AC-FT 65250
WTR YR 1980 TOTAL 4756.63 MEAN 13.0 MAX 103 MIN .48 AC-FT 9430

05116500 DES LACS RIVER AT FOXHOLM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-51, 1969-70, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
04...	1830	50	1090	8.5	11.0	340	42	65	43
NOV									
07...	1210	24	1210	8.1	.0	360	58	68	46
29...	1305	17	1290	8.0	.5	420	78	78	55
JAN									
08...	1330	6.0	1700	7.8	.0	470	100	84	63
FEB									
07...	1400	3.4	1830	7.3	.5	680	150	130	86
MAR									
†07...	1030	2.5	2400	7.6	.0	810	150	160	100
07...	1031	2.5	2400	7.6	.0	810	400	160	100
APR									
01...	1300	7.7	1150	--	1.0	--	--	--	--
03...	1120	25	1070	--	.5	--	--	--	--
10...	1000	24	920	8.8	.5	260	50	52	32
30...	1130	19	1120	E7.9	15.0	340	39	69	41
JUN									
04...	1000	5.3	1400	8.5	18.0	450	53	91	54
JUL									
08...	0920	1.6	1660	8.5	21.0	500	74	91	66
AUG									
06...	1100	.80	1460	8.9	17.0	380	90	52	61
SEP									
†10...	0910	.53	1540	8.4	12.5	410	32	64	61
10...	0911	.53	1540	8.4	12.5	400	49	64	58

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT									
04...	120	42	2.8	16	362	0	297	1.8	290
NOV									
07...	120	41	2.8	17	367	0	301	4.7	320
29...	150	42	3.2	19	418	0	343	6.7	380
JAN									
08...	170	42	3.4	26	447	0	367	11	480
FEB									
07...	190	37	3.2	21	646	0	530	52	560
MAR									
07...	290	43	4.4	23	812	0	666	33	750
07...	270	41	4.1	37	--	--	410	--	770
APR									
01...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
10...	110	46	3.0	11	258	0	212	.7	270
30...	130	44	3.1	12	368	0	302	--	320
JUN									
04...	170	44	3.5	14	483	0	396	2.4	400
JUL									
08...	220	48	4.3	12	518	0	425	2.6	500
AUG									
06...	190	51	4.2	11	355	0	291	.7	460
SEP									
10...	220	53	4.7	9.8	462	0	379	2.9	470
10...	220	--	4.8	--	--	--	350	--	480

E - Estimated.

† - Analyses done by North Dakota State Water Commission Laboratory.

05116500 DES LACS RIVER AT FOXHOLM, ND—Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT									
04...	16	.2	21	750	1.08	107	360	160	20
NOV									
07...	18	.2	11	781	1.10	52.4	130	20	60
29...	20	.2	10	918	1.32	44.4	230	10	90
JAN									
08...	23	.2	10	1080	1.56	18.6	640	360	170
FEB									
07...	28	.2	18	1350	1.90	12.9	230	150	1200
MAR									
07...	42	.3	19	1790	2.58	13.2	230	50	1200
07...	46	.3	28	1660	2.52	12.9	240	10	120
APR									
01...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
10...	14	.1	7.6	627	.88	42.8	100	710	300
30...	20	.2	4.6	779	1.06	39.9	260	20	10
JUN									
04...	25	.3	9.3	1000	1.36	14.3	200	80	190
JUL									
08...	33	.3	14	1190	1.67	5.31	100	50	110
AUG									
06...	29	.3	12	995	1.41	2.25	0	20	300
SEP									
10...	35	.3	5.1	1090	1.54	1.62	0	20	130
10...	33	.4	4.9	1070	1.54	1.62	130	10	110

05117500 SOURIS (MOUSE) RIVER ABOVE MINOT, ND

LOCATION.--Lat 48°14'45", long 101°22'15", in NW¼NW¼SE¼ sec.17, T.155 N., R.83 W., Ward County, Hydrologic Unit 09010001, on right bank 180 ft (55 m) downstream from county highway bridge, 3.5 mi (5.6 km) west of Minot, 7 mi (11 km) downstream from Des Lacs River, and at mile 388.5 (625.1 km).

DRAINAGE AREA.--10,600 mi² (27,500 km²), approximately, of which about 6,700 mi² (17,400 km²) is probably noncontributing.

PERIOD OF RECORD.--May 1903 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as Mouse River at Minot, 1903-24, Souris River at Minot, 1927-28, 1929-34, and Souris River near Minot, 1928-29.

REVISED RECORDS.--WSP 1308: 1905, 1909-14, 1918, 1924-25, 1927. WSP 1338: 1903-4, 1906, 1917, 1928, 1929(M). WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,545.75 ft (471.145 m) National Geodetic Vertical Datum of 1929. May 5, 1903, to Sept. 30, 1928, Oct. 1, 1929, to Sept. 30, 1934, nonrecording gages at mile 377.6 (607.6 km) in Minot, at datum 12.5 ft (3.8 m) lower, Oct. 1, 1928, to Sept. 30, 1929, nonrecording gages at Saugstad bridge at mile 366.8 (590.2 km), 5 mi (8 km) southeast of Minot and at datum 19.2 ft (5.85 m) lower than present datum. Records equivalent except those for periods of extreme low flow, as some industrial and sanitary waste enters river between the sites.

REMARKS.--Records fair. Flow almost completely regulated by Lake Darling (station 05115500), 41 mi (66 km) upstream and several smaller reservoirs; combined capacity, about 248,000 acre-ft (306 hm³). Some small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--77 years, 171 ft³/s (4.843 m³/s), 123,900 acre-ft/yr (153 hm³/yr); median of yearly mean discharges, 90 ft³/s (2.55 m³/s), 65,200 acre-ft/yr (80 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s (340 m³/s) Apr. 20, 1904, gage height, 21.9 ft (6.675 m) at site in Minot, from rating curve extended above 8,100 ft³/s (229 m³/s); no flow at times in some years. Maximum stage at present site, about 23 ft (7.0 m) in April 1904.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage in Minot at least 3 ft (0.9 m) higher than 1904 peak, in 1881, according to Apr. 20, 1904 issue of Minot Daily Optic. This peak probably occurred in 1882.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 577 ft³/s (16.3m³/s) May 1, gage height, 6.68 ft (2.036 m); minimum daily, 1.3 ft³/s (0.037 m³/s) July 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	43	18	8.0	6.5	6.0	32	421	7.3	1.8	7.3	15
2	51	43	17	7.0	6.5	6.0	33	171	6.6	1.8	7.3	14
3	51	38	16	7.0	6.5	6.0	32	98	5.4	1.8	8.0	13
4	49	36	16	6.0	6.5	6.0	38	108	7.3	2.6	8.0	12
5	51	38	18	6.0	6.5	6.0	45	116	6.6	3.0	7.3	11
6	49	40	18	5.0	6.5	6.0	51	113	532	3.0	10	9.5
7	49	45	18	5.0	6.5	6.0	58	118	118	3.0	9.5	5.4
8	52	45	16	4.5	6.5	6.0	62	118	35	3.0	8.7	6.0
9	51	47	16	4.5	6.5	6.0	58	100	16	3.0	9.5	6.0
10	49	45	14	4.5	6.5	7.0	47	56	13	3.0	10	6.0
11	49	45	14	4.5	6.5	6.5	77	38	8.0	2.6	12	7.3
12	69	43	14	4.5	6.5	6.5	20	24	6.0	2.0	12	13
13	98	42	14	4.5	6.3	6.5	40	22	6.0	1.8	12	12
14	64	38	14	4.5	6.3	6.0	62	22	6.0	1.3	13	11
15	54	38	12	5.0	6.3	6.0	60	22	6.0	1.8	13	10
16	49	38	12	5.0	6.3	6.0	62	20	5.4	3.4	17	10
17	43	36	12	5.0	6.3	6.0	64	19	4.3	4.3	17	10
18	12	35	12	5.0	6.3	6.0	58	19	5.4	4.3	16	11
19	10	35	10	5.0	6.3	7.0	52	20	5.4	5.4	14	14
20	42	32	10	5.0	6.3	9.0	45	18	5.4	3.4	14	15
21	45	24	10	5.5	6.3	9.0	38	16	4.3	8.0	16	15
22	45	28	10	5.5	6.3	10	35	14	3.4	9.5	15	16
23	45	26	10	5.5	6.0	10	30	11	3.0	9.5	16	17
24	45	26	10	5.5	6.0	10	29	9.5	3.4	8.7	15	18
25	45	28	10	5.5	6.0	11	26	9.5	3.4	8.7	14	18
26	45	24	10	6.0	6.0	13	28	8.7	2.6	9.5	12	16
27	45	23	10	6.0	6.0	15	134	8.0	2.6	8.7	13	11
28	45	20	9.0	6.0	6.0	21	160	7.3	3.0	9.5	12	11
29	43	20	9.0	6.0	6.0	24	444	9.5	2.6	9.5	11	10
30	43	19	8.0	6.0	---	29	551	8.0	2.4	7.3	13	10
31	42	---	8.0	6.0	---	30	---	8.0	---	7.3	13	---
TOTAL	1479	1040	395.0	169.0	183.0	308.5	2471	1752.5	835.8	152.5	375.6	353.2
MEAN	47.7	34.7	12.7	5.45	6.31	9.95	82.4	56.5	27.9	4.92	12.1	11.8
MAX	98	47	18	8.0	6.5	30	551	421	532	9.5	17	18
MIN	10	19	8.0	4.5	6.0	6.0	20	7.3	2.4	1.3	7.3	5.4
AC-FT	2930	2060	783	335	363	612	4900	3480	1660	302	745	701

CAL YR 1979 TOTAL 246752.0 MEAN 676 MAX 5920 MIN 8.0 AC-FT 489400
WTR YR 1980 TOTAL 9515.1 MEAN 26.0 MAX 551 MIN 1.3 AC-FT 18870

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND

LOCATION.--Lat 48°09'35", long 100°43'45", in NW¼SW¼ sec.17, T.154 N., R.78 W., McHenry County, Hydrologic Unit 09010003, on left bank 2.7 mi (4.3 km) north of Verendrye, 19 mi (31 km) upstream from mouth of Wintering River, and at mile 302.0 (485.9 km).

DRAINAGE AREA.--11,300 mi² (29,300 km²), approximately, of which about 6,900 mi² (17,900 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to June 1933 (gage heights only), April 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,464.87 ft (446.492 m) National Geodetic Vertical Datum of 1929. February to June 1933, at site 4 mi (6 km) upstream at datum 1.65 ft (0.503 m) higher. April 1, 1937 to Mar. 3, 1938, nonrecording gage at present site, at datum 1.97 ft (0.600 m) higher.

REMARKS.--Records fair. Flow regulated by reservoirs on Souris and Des Lacs Rivers, the largest of which is Lake Darling (station 05115500), 128 mi (206 km) upstream, combined capacity about 248,000 acre-ft (306 hm³). Some small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--43 years, 220 ft³/s (6.230 m³/s), 159,400 acre-ft/yr (197 hm³/yr); median of yearly mean discharges, 120 ft³/s (3.40 m³/s), 86,900 acre-ft/yr (110 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,900 ft³/s (280 m³/s) Apr. 19, 1976, gage height, 17.84 ft (5.438 m); minimum recorded, 0.3 ft³/s (0.008 m³/s) Aug. 11-19, 1937, Oct. 10-21, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 587 ft³/s (16.6 m³/s) May 3, gage height, 6.88 ft (2.097 m); minimum daily discharge, 5.7 ft³/s (0.16 m³/s) Aug. 1-2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	42	33	35	16	14	120	291	13	13	5.7	22
2	61	41	33	35	16	14	140	509	12	13	5.7	22
3	61	41	32	37	16	14	150	578	12	13	9.3	21
4	60	40	32	37	16	14	145	468	12	14	51	18
5	66	42	33	36	16	14	139	244	12	18	25	16
6	61	39	34	34	15	14	132	124	12	22	24	15
7	50	43	34	32	15	14	132	100	11	21	22	20
8	49	42	33	30	15	14	112	101	11	17	19	24
9	49	39	33	28	15	14	96	99	10	14	18	24
10	48	46	34	26	15	14	105	106	9.3	12	17	21
11	49	64	35	24	15	14	132	104	8.9	11	17	18
12	50	69	38	23	15	14	122	95	24	8.9	18	18
13	50	66	40	22	15	14	98	71	30	7.5	20	17
14	50	63	40	21	15	14	88	57	25	7.0	18	18
15	51	65	37	20	15	14	84	48	21	7.0	19	18
16	75	68	38	19	15	14	60	40	19	7.0	20	15
17	84	67	42	19	15	14	54	36	17	6.5	21	14
18	68	64	44	19	15	14	70	33	17	6.5	21	13
19	58	59	40	19	15	14	70	32	15	7.5	21	14
20	55	48	36	19	15	14	70	34	14	7.5	22	17
21	53	39	35	19	15	14	70	29	14	7.5	24	17
22	48	38	35	19	15	14	65	26	14	7.9	30	17
23	40	40	36	19	15	14	60	23	14	7.5	36	15
24	34	38	37	19	15	14	67	20	14	6.5	36	15
25	35	36	37	19	15	14	72	18	13	6.5	31	15
26	38	34	38	18	14	15	63	16	14	6.5	26	15
27	42	33	37	18	14	15	53	15	14	6.5	24	14
28	40	33	36	17	14	15	54	15	15	6.5	23	12
29	41	33	36	17	14	20	56	15	14	6.5	23	11
30	42	33	35	16	---	40	76	13	13	6.5	23	11
31	42	---	35	16	---	100	---	13	---	6.1	22	---
TOTAL	1611	1403	1118	732	436	555	2755	3373	444.2	307.9	691.7	507
MEAN	52.0	46.8	36.1	23.6	15.0	17.9	91.8	109	14.8	9.93	22.3	16.9
MAX	84	69	44	37	16	100	150	578	30	22	51	24
MIN	34	33	32	16	14	14	53	13	8.9	6.1	5.7	11
AC-FT	3200	2780	2220	1450	865	1100	5460	6690	881	611	1370	1010

CAL YR 1979 TOTAL 257226.0 MEAN 705 MAX 6000 MIN 26 AC-FT 510200
WTR YR 1980 TOTAL 13933.8 MEAN 38.1 MAX 578 MIN 5.7 AC-FT 27640

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-51, 1952 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1973 to current year.
WATER TEMPERATURES: October 1973 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,110 micromhos Dec. 12, 1977; minimum, 306 micromhos Apr. 20, 1979.
WATER TEMPERATURES: Maximum, 28.0°C July 19, 1974; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,540 micromhos Aug. 26; minimum, 572 micromhos Aug. 8.
WATER TEMPERATURES: Maximum, 27.0°C July 13; minimum, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	COLOR (PLATINUM COBALT UNITS) (00080)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
OCT										
10...	1015	47	1420	8.2	6.5	45	380	15	76	45
NOV										
05...	1615	44	1230	--	1.5	--	--	--	--	--
DEC										
03...	1545	31	1410	--	.5	--	--	--	--	--
JAN										
16...	1615	19	1510	7.3	.0	20	510	65	110	56
FEB										
04...	1415	16	1450	--	.0	--	--	--	--	--
MAR										
03...	1435	14	1510	--	.0	--	--	--	--	--
APR										
02...	1040	144	1110	--	.5	--	--	--	--	--
11...	1115	110	965	7.7	.5	30	300	77	63	34
JUN										
02...	1600	12	1140	--	19.0	--	--	--	--	--
JUL										
07...	1525	21	1140	8.2	24.0	20	390	16	82	44
AUG										
05...	1300	25	930	--	17.0	--	--	--	--	--
SEP										
02...	1630	22	1140	--	16.5	--	--	--	--	--

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT										
10...	180	50	4.0	200	15	360	350	59	.5	12
NOV										
05...	--	--	--	--	--	--	--	--	--	--
DEC										
03...	--	--	--	--	--	--	--	--	--	--
JAN										
16...	170	41	3.3	190	17	440	390	36	.3	14
FEB										
04...	--	--	--	--	--	--	--	--	--	--
MAR										
03...	--	--	--	--	--	--	--	--	--	--
APR										
02...	--	--	--	--	--	--	--	--	--	--
11...	110	44	2.8	120	9.7	220	270	21	.1	.1
JUN										
02...	--	--	--	--	--	--	--	--	--	--
JUL										
07...	130	41	2.9	140	13	370	240	31	.3	18
AUG										
05...	--	--	--	--	--	--	--	--	--	--
SEP										
02...	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	BORON, DIS-SOLVED (UG/L AS B) (01020)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT									
10...	992	957	1.35	126	.80	1.200	290	11	1.4
NOV									
05...	--	--	--	--	--	--	--	4	.48
DEC									
03...	--	--	--	--	--	--	--	14	1.2
JAN									
16...	1080	1060	1.47	55.4	.20	.080	200	22	1.1
FEB									
04...	--	--	--	--	--	--	--	28	1.2
MAR									
03...	--	--	--	--	--	--	--	70	2.6
APR									
02...	--	--	--	--	--	--	--	--	--
11...	690	642	.94	205	.43	.090	150	12	3.6
JUN									
02...	--	--	--	--	--	--	--	14	.45
JUL									
07...	811	781	1.10	46.0	.00	.410	260	6	.34
AUG									
05...	--	--	--	--	--	--	--	32	2.2
SEP									
02...	--	--	--	--	--	--	--	21	1.2

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1420	1410	1250	1250	1470	1460	1470	1460	1470	1460	1510	1500
2	1430	1430	1250	1240	1470	1430	1470	1470	1460	1460	1510	1510
3	1430	1420	1240	1240	1430	1400	1480	1480	1460	1450	1510	1510
4	1430	1420	1240	1230	1410	1370	1480	1480	1470	1450	1500	1500
5	1430	1420	1230	1230	1400	1380	1490	1490	1470	1470	1500	1500
6	1420	1410	1230	1230	1400	1380	1490	1480	1470	1460	1500	1500
7	1420	1410	1230	1230	1390	1370	1490	1480	1470	1470	1500	1500
8	1420	1420	1240	1230	1370	1360	1490	1490	1480	1470	1500	1500
9	1420	1420	1240	1230	1360	1350	1500	1490	1470	1470	1500	1480
10	1430	1420	1240	1230	1350	1340	1500	1490	1480	1470	1490	1490
11	1420	1410	1240	1230	1340	1320	1490	1490	1480	1470	1490	1480
12	1410	1400	1240	1240	1330	1320	1500	1500	1480	1470	1490	1480
13	1400	1400	1240	1240	1320	1320	1510	1500	1480	1480	1480	1480
14	1400	1380	1240	1230	1320	1320	1510	1480	1480	1480	1470	1470
15	1370	1320	1240	1230	1330	1330	1530	1470	1480	1480	1470	1460
16	1320	1260	1260	1230	1340	1330	1520	1470	1490	1480	1460	1460
17	1260	1250	1290	1260	1350	1340	1520	1510	1490	1480	1470	1450
18	1250	1250	1310	1290	1360	1350	1530	1500	1490	1480	1460	1450
19	1250	1250	1320	1310	1370	1360	1520	1510	1490	1490	1460	1450
20	1250	1250	1330	1320	1380	1370	1510	1500	1490	1490	1450	1450
21	1240	1240	1340	1330	1390	1380	1510	1510	1500	1500	1440	1440
22	1240	1230	1350	1330	1400	1390	1510	1500	1500	1490	1440	1430
23	1240	1230	1360	1340	1410	1400	1500	1500	1500	1490	1420	1410
24	1230	1230	1370	1350	1420	1410	1500	1490	1500	1500	1410	1360
25	1230	1220	1380	1360	1420	1420	1490	1490	1500	1500	1360	1310
26	1230	1230	1390	1380	1430	1430	1490	1480	1500	1500	1310	1220
27	1240	1230	1410	1390	1440	1430	1490	1480	1500	1500	1230	1210
28	1240	1240	1430	1410	1440	1440	1480	1470	1500	1500	1210	1190
29	1250	1240	1450	1430	1450	1440	1480	1470	---	---	1160	1140
30	1250	1240	1460	1450	1450	1450	1470	1460	---	---	1130	1100
31	1250	1240	---	---	1460	1450	1470	1460	---	---	1110	1090
MONTH	1430	1220	1460	1230	1470	1320	1530	1460	1500	1450	1510	1090

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1110	1090	1210	1100	1130	1110	1040	1020	1160	1140	1220	1160
2	1110	1100	1220	1050	1140	1120	1040	1020	1150	1140	1160	1130
3	1100	1100	1040	989	1150	1140	1060	1030	1150	1080	1130	1120
4	1090	1070	986	958	1160	1150	1110	1050	1120	913	1120	1100
5	1070	1060	965	958	1170	1150	1150	1100	969	902	1100	1090
6	1050	1040	974	965	1170	1160	1140	1130	900	756	1100	1090
7	1030	1010	974	971	1160	1150	1140	1120	755	578	1100	1090
8	1010	992	984	971	1150	1140	1140	1130	803	572	---	---
9	992	986	981	936	1160	1140	1150	1140	830	802	---	---
10	989	979	936	917	1150	1140	1170	1150	861	842	1190	1150
11	990	982	917	906	1150	1140	1170	1160	864	858	1200	1160
12	1000	992	906	901	1150	1140	1170	1160	859	853	1160	1100
13	1010	995	906	901	1160	1140	1180	1170	874	854	1100	1080
14	1030	1010	912	904	1170	1140	1170	1140	739	675	1090	1080
15	1070	1040	926	912	1180	1160	1140	1110	817	737	1120	1100
16	1100	1070	940	923	1180	1160	1120	1110	866	818	1120	1120
17	1130	1110	957	937	1190	1170	1120	1120	998	870	1120	1090
18	1150	1130	979	954	1170	1140	1150	1120	1140	1010	1100	1090
19	1160	1150	995	973	1140	1120	1160	1140	1150	1140	1100	1080
20	1180	1160	1010	983	1120	1100	1160	1140	1150	1120	1120	1100
21	1190	1170	989	967	1100	1090	1160	1150	1160	1130	1110	1070
22	1210	1190	1020	986	1110	1070	1150	1140	1160	1110	1100	1070
23	1250	1210	1040	1010	1070	1060	1150	1140	1270	1140	1130	1100
24	1280	1250	1060	1040	1080	1070	1150	1150	1330	1220	---	---
25	1280	1280	1080	1060	1070	1070	1150	1140	1500	1380	---	---
26	1280	1240	1100	1070	1060	1050	1140	1140	1540	1500	1270	1230
27	1230	1170	1110	1090	1050	1030	1140	1130	1520	1500	1290	1240
28	1170	1120	1120	1110	1030	1010	1140	1130	1490	1450	1280	1260
29	1120	1080	1130	1110	1030	1010	1130	1130	1470	1340	1270	1260
30	1090	1070	1120	1110	1030	1010	1140	1130	1330	1210	1270	1270
31	---	---	1120	1100	---	---	1150	1140	1230	1210	---	---
MONTH	1280	979	1220	901	1190	1010	1180	1020	1540	572	1290	1070

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.0	12.0	4.5	3.0	.5	.0	.5	.0	.0	.0	.0	.0
2	12.5	12.0	3.0	2.5	.5	.0	.0	.0	.0	.0	.0	.0
3	11.5	11.0	2.5	1.5	.5	.0	.0	.0	.0	.0	.0	.0
4	11.0	10.0	2.0	1.0	.5	.0	.0	.0	.0	.0	.0	.0
5	10.5	9.5	1.5	.5	.5	.0	.0	.0	.0	.0	.0	.0
6	10.0	9.0	1.0	.5	.5	.0	.0	.0	.0	.0	.0	.0
7	9.5	9.0	.5	.5	.0	.0	.0	.0	.0	.0	.0	.0
8	9.5	9.0	.5	.5	.5	.0	.0	.0	.0	.0	.0	.0
9	9.0	8.5	.5	.5	.5	.0	.0	.0	.0	.0	.0	.0
10	9.5	8.5	.5	.5	.5	.0	.0	.0	.0	.0	.0	.0
11	10.0	9.5	.5	.5	.0	.0	.0	.0	.0	.0	.0	.0
12	9.5	8.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	8.0	7.0	.5	.5	.0	.0	.0	.0	.0	.0	.0	.0
14	8.0	7.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.0
15	8.0	7.0	.5	.5	.5	.0	.0	.0	.0	.0	.0	.0
16	8.5	7.5	.5	.5	.0	.0	.0	.0	.0	.0	.0	.0
17	8.0	7.0	.5	.5	.5	.0	.0	.0	.0	.0	.0	.0
18	8.5	8.0	.5	.5	.5	.0	.0	.0	.0	.0	.0	.0
19	8.0	7.5	.5	.5	.5	.0	.0	.0	.0	.0	.0	.0
20	8.0	7.5	.5	.0	.5	.0	.0	.0	.0	.0	.0	.0
21	7.0	6.5	.5	.0	.5	.0	.0	.0	.0	.0	.0	.0
22	6.5	5.5	.5	.0	.5	.0	.0	.0	.0	.0	.0	.0
23	5.5	5.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	5.0	4.5	.5	.0	.5	.0	.0	.0	.0	.0	.0	.0
25	4.5	4.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.0
26	4.5	4.0	.5	.0	.5	.0	.0	.0	.0	.0	.0	.0
27	5.0	4.5	.5	.0	.5	.0	.0	.0	.0	.0	.0	.0
28	5.5	4.5	.5	.0	.5	.0	.0	.0	.0	.0	.0	.0
29	5.5	5.0	.5	.0	.5	.0	.0	.0	.0	.0	.5	.0
30	6.0	5.0	.5	.0	.5	.0	.0	.0	---	---	.5	.0
31	5.0	4.5	---	---	.5	.0	.0	.0	---	---	.5	.0
MONTH	13.0	4.0	4.5	.0	.5	.0	.5	.0	.0	.0	.5	.0

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	.5	.0	18.5	17.0	20.5	18.0	22.0	18.5	22.0	21.0	17.0	16.5
2	.5	.0	18.5	17.5	20.5	18.0	22.0	19.0	22.5	20.0	17.5	16.0
3	.5	.5	19.0	17.5	20.5	19.0	24.5	20.0	22.0	20.5	17.0	16.5
4	1.0	.5	19.5	18.5	21.0	19.5	24.0	21.5	20.0	16.5	17.0	15.0
5	1.0	.5	19.0	18.0	21.5	19.5	24.5	21.0	18.0	16.5	17.0	15.0
6	1.0	.5	18.0	16.5	21.0	18.5	24.5	21.5	17.5	16.5	17.0	15.5
7	1.0	.5	16.0	13.5	20.0	18.0	25.0	22.5	18.5	16.5	19.0	16.0
8	.5	.5	14.5	12.5	19.5	17.5	23.5	22.0	20.0	17.0	---	---
9	1.5	.5	13.5	12.5	21.5	18.0	23.5	22.5	19.0	17.5	---	---
10	2.0	.5	13.5	12.0	22.5	18.5	25.0	22.0	19.5	18.0	17.0	15.5
11	2.0	.5	13.5	12.0	22.5	20.0	25.5	23.5	21.5	18.0	17.0	16.0
12	2.5	.5	14.0	12.0	22.5	20.5	25.0	23.5	20.5	19.0	16.5	15.5
13	4.0	1.0	13.5	12.5	24.0	21.0	27.0	23.5	20.5	18.0	16.0	15.0
14	7.0	3.5	14.0	12.5	23.5	21.5	26.5	24.0	20.0	18.5	15.5	15.0
15	8.0	6.0	15.5	13.0	22.5	20.5	24.5	23.0	20.0	18.5	15.0	14.0
16	9.0	7.5	16.5	14.0	22.5	20.0	25.0	22.0	18.5	17.0	14.0	13.0
17	10.5	8.5	18.0	15.0	23.0	21.0	24.0	22.0	17.5	16.5	13.0	12.0
18	12.5	10.0	18.5	15.5	21.5	19.5	24.0	21.0	19.5	16.5	12.0	11.5
19	13.5	11.5	19.5	16.5	22.5	19.0	22.5	20.5	20.5	18.0	12.0	12.0
20	15.0	13.0	20.0	17.5	23.0	19.5	23.0	20.0	20.0	19.0	13.5	11.5
21	16.5	15.0	21.0	18.5	23.0	[illegible]	22.5	20.5	19.5	18.0	13.0	12.0
22	16.5	15.0	22.5	19.5	25.0	20.5	23.5	20.5	20.0	18.0	12.0	11.5
23	16.0	15.0	22.0	20.0	24.0	21.0	24.0	21.5	20.0	18.5	12.0	11.0
24	15.5	14.0	22.5	20.0	24.5	22.0	25.5	23.5	21.5	19.5	---	---
25	15.5	13.5	23.0	20.5	24.5	21.0	23.5	21.5	21.0	20.0	---	---
26	15.5	14.0	23.5	20.5	23.5	20.5	24.5	21.5	19.5	18.5	11.5	10.0
27	16.5	14.5	22.0	20.0	20.5	19.5	23.5	22.5	19.0	17.0	11.5	10.0
28	17.5	15.0	21.5	20.5	19.5	17.0	24.5	21.5	19.5	17.5	11.5	10.5
29	18.0	16.0	21.5	19.5	20.5	16.5	23.5	21.5	19.0	18.0	13.0	11.5
30	18.0	16.0	21.0	18.5	21.0	16.0	24.0	21.0	18.5	17.0	13.0	11.5
31	---	---	20.5	18.5	---	---	24.5	21.0	18.0	17.0	---	---
MONTH	18.0	.0	23.5	12.0	25.0	16.5	27.0	18.5	22.5	16.5	19.0	10.0

05120500 WINTERING RIVER NEAR KARLSRUHE, ND

LOCATION.--Lat 48°10'14", long 100°32'20", on line between secs.10 and 11, T.154 N., R.77 W., McHenry County, Hydrologic Unit 09010003, on left bank 30 ft (9 m) upstream from county highway bridge, 4 mi (6 km) upstream from mouth, and 7 mi (11 km) northeast of Karlsruhe.

DRAINAGE AREA.--705 mi² (1,826 km²), of which about 420 mi² (1,090 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,480 ft (451 m), from river-profile map.

REMARKS.--Records fair. Some regulation by Fish and Wildlife Service dams on Cottonwood and Wintering Lakes; controlled capacity, about 850 acre-ft (1.05 hm³).

AVERAGE DISCHARGE.--43 years, 12.8 ft³/s (0.362 m³/s), 9,270 acre-ft/yr (11.4 hm³/yr); median of yearly mean discharges, 11 ft³/s (0.31 m³/s), 8,000 acre-ft/yr (9.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,000 ft³/s (85.0 m³/s) Apr. 7, 1949, by velocity-area studies; maximum gage height, 12.0 ft (3.66 m) Apr. 7, 1949, channel choked by packed snow; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 100 ft³/s (2.83 m³/s) Mar. 30, gage height, 7.76 ft (2.365 m), backwater from ice; minimum daily, 0.65 ft³/s (0.018 m³/s) July 31 to Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	3.2	3.0	2.0	1.3	1.0	50	14	2.0	.85	.65	2.8
2	3.0	3.2	2.9	1.9	1.3	1.0	40	14	1.9	.80	.65	2.8
3	3.0	3.2	3.0	1.8	1.3	1.0	35	13	1.8	.75	.65	2.6
4	3.0	3.2	3.0	1.8	1.3	1.0	30	12	1.7	.85	.90	2.5
5	3.1	3.2	3.1	1.8	1.3	1.0	25	12	1.6	.95	2.0	2.4
6	3.1	3.2	3.3	1.7	1.3	1.0	22	11	1.8	1.0	3.2	2.4
7	3.2	3.2	3.2	1.6	1.3	1.0	20	11	1.7	1.5	2.8	2.3
8	3.6	3.2	3.2	1.6	1.3	1.0	20	11	1.5	1.5	2.6	2.2
9	3.7	3.1	3.1	1.6	1.3	1.0	19	10	1.4	1.2	3.0	2.1
10	3.8	3.0	3.1	1.6	1.3	1.0	19	10	1.4	1.1	2.6	2.0
11	3.8	3.0	3.0	1.6	1.3	1.1	18	9.5	1.3	1.2	2.4	2.0
12	4.0	3.1	2.9	1.6	1.2	1.2	18	9.2	1.3	1.1	2.3	3.0
13	3.8	3.2	2.8	1.6	1.2	1.3	20	9.0	1.5	1.0	2.2	4.5
14	4.0	3.2	2.6	1.6	1.1	1.5	22	8.3	1.7	.90	2.1	4.0
15	3.7	3.2	2.6	1.6	1.1	1.7	21	7.2	1.5	.85	2.0	3.5
16	3.8	3.2	2.3	1.6	1.0	2.0	20	7.2	1.4	.95	2.5	3.4
17	4.0	3.2	2.0	1.6	1.0	2.0	20	6.7	1.3	.95	[illegible]	3.3
18	3.6	3.2	2.0	1.6	1.0	2.5	19	6.3	1.4	.90	6.0	3.4
19	3.6	3.2	2.0	1.6	1.0	2.5	18	6.1	1.5	.90	[illegible]	3.5
20	4.0	3.2	2.1	1.6	1.0	2.0	17	5.8	1.4	1.1	[illegible]	3.4
21	4.0	3.2	2.2	1.6	1.0	1.8	17	5.4	1.3	1.2	6.0	3.3
22	4.0	3.1	2.3	1.6	1.0	1.6	16	5.0	1.2	1.0	5.5	3.3
23	3.8	3.1	2.4	1.6	1.0	1.5	16	4.6	1.4	.90	5.5	3.3
24	3.8	3.1	2.6	1.6	1.0	1.5	16	4.2	1.5	.90	5.2	3.4
25	3.8	3.1	2.4	1.5	1.0	1.5	16	3.8	1.3	.85	5.0	3.2
26	4.0	3.1	2.4	1.5	1.0	1.5	16	3.4	1.1	.80	4.8	3.0
27	3.8	3.1	2.3	1.4	1.0	1.6	16	3.0	.90	.85	4.4	2.9
28	3.6	3.1	2.3	1.3	1.0	1.8	16	2.7	1.0	.80	4.0	2.8
29	3.8	3.0	2.3	1.3	1.0	2.5	15	2.5	.95	.75	4.0	2.7
30	3.4	3.0	2.3	1.3	---	30	15	2.3	.90	.70	3.6	2.6
31	3.3	---	2.3	1.3	---	80	---	2.1	---	.65	3.2	---
TOTAL	112.0	94.3	81.0	49.4	32.9	153.1	632	232.3	42.65	29.75	101.55	88.6
MEAN	3.61	3.14	2.61	1.59	1.13	4.94	21.1	7.49	1.42	.96	3.28	2.95
MAX	4.0	3.2	3.3	2.0	1.3	80	50	14	2.0	1.5	6.0	4.5
MIN	2.9	3.0	2.0	1.3	1.0	1.0	15	2.1	.90	.65	.65	2.0
AC-FT	222	187	161	98	65	304	1250	461	85	59	201	176

CAL YR 1979 TOTAL 10999.78 MEAN 30.1 MAX 1200 MIN .00 AC-FT 21820
WTR YR 1980 TOTAL 1649.55 MEAN 4.51 MAX 80 MIN .65 AC-FT 3270

05120500 WINTERING RIVER NEAR KARLSRUHE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-56, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT												
02...	1820	3.0	780	8.5	13.0	50	270	0	59	29	89	41
NOV												
08...	1300	3.2	775	--	.0	--	--	--	--	--	--	--
20...	1555	3.1	755	--	.5	--	--	--	--	--	--	--
JAN												
15...	1730	1.6	670	7.2	.5	15	280	0	69	26	46	26
FEB												
04...	1645	1.4	635	--	.5	--	--	--	--	--	--	--
APR												
02...	1245	38	335	--	.5	--	--	--	--	--	--	--
07...	1330	20	460	8.5	.5	50	140	0	33	14	40	37
11...	1100	21	590	--	1.5	--	--	--	--	--	--	--
28...	1330	15	1090	--	16.0	--	--	--	--	--	--	--
JUN												
02...	1200	1.9	940	--	19.0	--	--	--	--	--	--	--
30...	1445	.91	630	8.8	24.0	35	220	0	42	28	65	38
AUG												
04...	1400	.89	540	--	16.5	--	--	--	--	--	--	--
SEP												
02...	1300	2.8	620	--	16.0	--	--	--	--	--	--	--

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
OCT												
02...	2.4	96	6.6	370	87	18	.2	11	504	537	.69	4.08
NOV												
08...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
15...	1.2	50	4.1	320	58	6.9	.2	24	415	427	.56	1.79
FEB												
04...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
07...	1.5	44	7.7	150	78	9.0	.1	11	300	284	.41	16.4
11...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
02...	--	--	--	--	--	--	--	--	--	--	--	--
30...	1.9	70	4.9	280	66	7.2	.4	10	419	392	.57	1.03
AUG												
04...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	--	--	--	--	--	--	--	--	--	--	--	--

05120500 WINTERING RIVER NEAR KARLSRUHE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
OCT												
02...	3.1	.040	0	2	200	220	<1	10	<3	1	20	0
NOV												
08...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
15...	.09	.020	--	--	--	120	--	--	--	--	--	--
FEB												
04...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
07...	.23	.210	--	--	--	210	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	40	2	100	--	<1	0	--	2	310	0
JUN												
02...	--	--	--	--	--	--	--	--	--	--	--	--
30...	.00	.120	--	--	--	160	--	--	--	--	--	--
AUG												
04...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT												
02...	40	20	.0	<10	0	0	170	<1.0	<3	.00	7	.06
NOV												
08...	--	--	--	--	--	--	--	--	--	--	10	.09
28...	--	--	--	--	--	--	--	--	--	--	8	.07
JAN												
15...	--	--	--	--	--	--	--	--	--	--	20	.09
FEB												
04...	--	--	--	--	--	--	--	--	--	--	4	.02
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	20	1.1
11...	--	--	--	--	--	--	--	--	--	--	--	--
28...	50	90	.2	13	2	0	210	--	<3	.00	10	.42
JUN												
02...	--	--	--	--	--	--	--	--	--	--	8	.04
30...	--	--	--	--	--	--	--	--	--	--	6	.01
AUG												
04...	--	--	--	--	--	--	--	--	--	--	9	.02
SEP												
02...	--	--	--	--	--	--	--	--	--	--	4	.03

05122000 SOURIS (MOUSE) RIVER NEAR BANTRY, ND

LOCATION.--Lat 48°30'20", long 100°26'04", in SE¼NW¼SE¼ sec.14, T.158 N., R.76 W., McHenry County, Hydrologic Unit 09010003, on left bank 200 ft (61 m) upstream from Nelson bridge, 8 mi (13 km) east of Bantry, 18 mi (29 km) upstream from Willow Creek, and at mile 228.0 (366.9 km).

DRAINAGE AREA.--12,300 mi² (31,900 km²), approximately, of which about 7,600 mi² (19,700 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,427.56 ft (435.120 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 16, 1938, nonrecording gage at same site at datum 0.17 ft (0.052 m) lower.

REMARKS.--Records good. Flow regulated by reservoirs on Souris, Des Lacs, and Wintering Rivers, total capacity, about 249,000 acre-ft (307 km). Diversions for irrigation of about 7,600 acres (30.8 km²) at Eaton Dam about 42 mi (68 km) above station and other small diversions for irrigation and municipal supply.

AVERAGE DISCHARGE.--43 years, 238 ft³/s (6.740 m³/s), 172,400 acre-ft/yr (213 hm³/yr); median of yearly mean discharges, 137 ft³/s (3.88 m³/s), 99,300 acre-ft/yr (122 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,330 ft³/s (264 m³/s) Apr. 23, 1976, gage height, 14.59 ft (4.447 m); no flow at times each year 1937-40, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 211 ft³/s (5.98 m³/s) June 2, gage height, 4.41 ft (1.344 m); maximum gage height, 6.59 ft (2.009 m) Apr. 7, backwater from ice; minimum daily discharge, 12 ft³/s (0.34 m³/s) Mar. 7-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	66	51	34	23	13	32	35	135	28	22	56
2	51	64	50	33	23	13	35	34	202	27	21	54
3	51	62	49	32	23	13	50	34	209	27	22	50
4	52	60	48	31	23	13	100	34	205	26	25	48
5	55	58	48	30	23	13	140	34	182	26	27	42
6	57	56	48	29	23	13	160	33	151	27	28	39
7	60	54	48	28	22	12	170	43	128	31	31	37
8	70	52	47	27	21	12	170	52	105	30	35	43
9	71	50	46	26	20	12	165	54	95	29	42	40
10	69	48	46	25	20	12	160	46	79	29	49	36
11	67	48	46	24	19	12	155	38	68	28	52	33
12	64	48	45	23	19	12	150	29	57	28	51	45
13	56	48	44	23	18	12	145	28	48	27	48	49
14	57	48	43	23	17	12	133	28	44	27	43	53
15	58	50	42	23	17	12	104	27	43	26	38	52
16	58	52	40	23	17	12	82	25	39	26	35	52
17	58	54	38	23	16	12	63	24	39	26	34	52
18	59	56	37	23	15	12	57	24	39	26	31	52
19	61	56	36	23	14	12	55	24	39	26	31	50
20	70	54	36	24	14	12	54	24	39	26	30	50
21	75	52	36	24	14	12	54	23	38	25	34	51
22	79	58	36	25	14	12	53	23	37	25	39	54
23	83	58	36	25	14	12	49	23	35	25	46	56
24	86	58	35	25	14	13	49	23	32	24	56	58
25	82	56	35	25	14	14	46	22	31	24	60	58
26	76	54	35	24	14	16	42	22	29	23	63	60
27	76	53	35	24	14	17	39	22	29	23	65	61
28	74	53	35	23	14	22	38	24	29	22	64	62
29	72	53	35	23	13	23	36	24	29	22	64	62
30	70	52	35	23	---	26	35	25	29	22	62	60
31	68	---	35	23	---	30	---	35	---	22	58	---
TOTAL	2040	1631	1276	791	512	443	2621	936	2264	803	1302	1509
MEAN	65.8	54.4	41.2	25.5	17.7	14.3	87.4	30.2	75.5	25.9	42.0	50.3
MAX	86	66	51	34	23	30	170	54	209	31	65	62
MIN	51	48	35	23	13	12	32	22	29	22	21	33
AC-FT	4050	3240	2530	1570	1020	879	5200	1860	4490	1590	2580	2990

CAL YR 1979 TOTAL 273712 MEAN 750 MAX 5850 MIN 35 AC-FT 542900
WTR YR 1980 TOTAL 16128 MEAN 44.1 MAX 209 MIN 12 AC-FT 31990

05123000 LAKE METIGOSHE NEAR BOTTINEAU, ND

LOCATION.--Lat 48°59'05", long 100°20'52", in SE¼SW¼ sec.35, T.164 N., R.75 W., Bottineau County, Hydrologic Unit 09010004, 25 ft (7.6 m) east from northeast corner of bridge over Lake Metigoshe, and 11.7 mi (18.8 km) northeast of Bottineau.

DRAINAGE AREA.--59 mi² (153 km²).

PERIOD OF RECORD.--June 1931 to September 1932, September 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,130.00 ft (649.224 m) National Geodetic Vertical Datum of 1929. 1931-32, nonrecording gage on north abutment of bridge at datum 6.32 ft (1.93 m) lower (reduced to elevations NGVD). Sept. 4, 1953, to Jan. 19, 1955, nonrecording gage at present datum on east end of south abutment of bridge.

REMARKS.--Outlet of lake is a concrete dam with removable stoplogs; average crest elevation without stoplogs about 2,138.0 ft (651.66 m) National Geodetic Vertical Datum of 1929. Lake level regulated since 1959 by dam and control works in the outlet of Sharpe Lake located on the principal tributary in Manitoba.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 9.70 ft (2.957 m) May 3, 1975; minimum, 4.28 ft (1.305 m) Sept. 17, 1932, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 6.97 ft (2.124 m) Apr. 21; minimum, 5.95 ft (1.814 m) Aug. 3.

MONTHEND GAGE HEIGHT, IN FEET, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Oct. 31--------	6.65	Jan. 31--------	*6.75	Apr. 30--------	6.92	July 31--------	*6.00
Nov. 30--------	6.65	Feb. 29--------	*6.78	May 31--------	6.52	Aug. 31--------	*6.45
Dec. 31--------	6.70	Mar. 31--------	6.85	June 30--------	6.28	Sept. 30--------	6.63

* - Estimated.

05123100 OAK CREEK AT LAKE METIGOSHE OUTLET NEAR BOTTINEAU, ND

LOCATION.--Lat 48°57'56", long 100°21'47", in SE¼SE¼ sec.3, T.163 N., R.75 W., Bottineau County, Hydrologic Unit 09010004, at outlet of Lake Metigoshe, and 10 mi (16 km) northeast of Bottineau.

DRAINAGE AREA.--59 mi² (153 km²).

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder and concrete control with stoplogs. Datum of gage is 2,130.00 ft (649.224 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 20, 1955, nonrecording gage at same site and datum. Gage is located 1.5 mi (2.4 km) northeast of outlet of lake, and is same as that used for station on Lake Metigoshe.

REMARKS.--No flow all year. Flow regulated since 1959 by dam and control works on the outlet of Sharpe Lake located on the principal tributary in Manitoba.

AVERAGE DISCHARGE.--27 years, 4.28 ft³/s (0.121 m³/s), 3,100 acre-ft/yr (3.82 hm³/yr); median of yearly mean discharges, 1.8 ft³/s (0.051 m³/s), 1,300 acre-ft/yr (1.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 148 ft³/s (4.19 m³/s) May 3, 1975, gage height, 9.70 ft (2.957 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--No flow all year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1979 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00
WTR YR 1980 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

05123400 WILLOW CREEK NEAR WILLOW CITY, ND

LOCATION.--Lat 48°35'20", long 100°26'30", in NE¼NW¼ sec.23, T.159 N., R.76 W., McHenry County, Hydrologic Unit 09010004, on left bank 50 ft (15 m) downstream from bridge on county road, 1.5 mi (2.4 km) upstream from Snake Creek, and 7 mi (11 km) west of Willow City.

DRAINAGE AREA.--1,160 mi² (3,000 km²), approximately, of which about 430 mi² (1,110 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,430 ft (436 m), from topographic map. Prior to Oct. 5, 1956, nonrecording gage at site 50 ft (15 m) upstream at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--24 years, 46.9 ft³/s (1.328 m³/s), 33,980 acre-ft/yr (41.9 hm³/yr); median of yearly mean discharges, 16 ft³/s (0.45 m³/s), 11,600 acre-ft/yr (14 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,900 ft³/s (167 m³/s) Apr. 12, 1969, gage height, 16.76 ft (5.108 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft³/s (1.42 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 15	1300	*127	3.60	7.75	2.362	Sept. 1	1200	80	2.27	7.47	2.277
June 7	1300	100	2.83	7.20	2.195	Sept. 23	1600	113	3.20	*7.98	2.432
Aug. 9	0500	52	1.47	6.96	2.121						

No flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	8.4	.00	.06	.00	80
2	.00	.00	.00	.00	.00	.00	.00	6.9	.00	.00	.00	79
3	.00	.00	.00	.00	.00	.00	.00	5.8	.00	.00	.00	74
4	.00	.00	.00	.00	.00	.00	.00	5.3	3.9	.00	.00	67
5	.00	.00	.00	.00	.00	.00	.00	4.5	6.5	.14	.00	56
6	.00	.00	.00	.00	.00	.00	.00	3.6	4.7	.03	.00	47
7	.00	.00	.00	.00	.00	.00	.05	3.0	90	.00	1.5	40
8	.00	.00	.00	.00	.00	.00	.10	2.3	84	.00	36	37
9	.00	.00	.00	.00	.00	.00	.30	2.1	56	.00	51	37
10	.00	.00	.00	.00	.00	.00	.70	1.8	34	.00	44	37
11	.00	.00	.00	.00	.00	.00	2.0	1.3	20	.00	34	38
12	.00	.00	.00	.00	.00	.00	4.0	1.0	14	.00	25	44
13	.00	.00	.00	.00	.00	.00	10	.97	10	.00	19	46
14	.00	.00	.00	.00	.00	.00	60	.67	8.4	.00	12	53
15	.00	.00	.00	.00	.00	.00	127	.48	6.7	.00	9.6	70
16	.00	.00	.00	.00	.00	.00	113	.36	5.6	.00	9.3	79
17	.00	.00	.00	.00	.00	.00	80	.24	4.5	.00	11	82
18	.00	.00	.00	.00	.00	.00	55	.21	4.4	.00	20	82
19	.00	.00	.00	.00	.00	.00	40	.14	3.5	.00	25	87
20	.00	.00	.00	.00	.00	.00	30	.10	3.5	.00	33	92
21	.00	.00	.00	.00	.00	.00	25	.07	3.2	.00	38	101
22	.00	.00	.00	.00	.00	.00	23	.04	2.1	.00	44	107
23	.00	.00	.00	.00	.00	.00	20	.01	1.2	.00	45	112
24	.00	.00	.00	.00	.00	.00	18	.00	.80	.00	52	110
25	.00	.00	.00	.00	.00	.00	16	.00	.50	.00	59	103
26	.00	.00	.00	.00	.00	.00	15	.00	.20	.00	67	102
27	.00	.00	.00	.00	.00	.00	14	.00	.10	.00	68	101
28	.00	.00	.00	.00	.00	.00	13	.00	.05	.00	69	100
29	.00	.00	.00	.00	.00	.00	11	.00	.02	.00	73	100
30	.00	.00	.00	.00	---	.00	10	.00	.00	.00	76	101
31	.00	---	.00	.00	---	.00	---	.00	---	.00	77	---
TOTAL	.00	.00	.00	.00	.00	.00	687.15	49.29	367.87	.23	998.40	2264
MEAN	.000	.000	.000	.000	.000	.000	22.9	1.59	12.3	.007	32.2	75.5
MAX	.00	.00	.00	.00	.00	.00	127	8.4	90	.14	77	112
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	37
AC-FT	.00	.00	.00	.00	.00	.00	1360	98	730	.5	1980	4490

CAL YR 1979 TOTAL 23514.21 MEAN 64.4 MAX 3100 MIN .00 AC-FT 46640
WTR YR 1980 TOTAL 4366.94 MEAN 11.9 MAX 127 MIN .00 AC-FT 8660

05123400 WILLOW CREEK NEAR WILLOW CITY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-56, 1960-65, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
APR									
10...	1315	.65	960	6.6	1.5	380	120	64	54
16...	1200	116	730	--	8.0	--	--	--	--
MAY									
01...	1230	7.4	1260	7.4	17.0	390	150	71	52
SEP									
02...	1630	78	1000	7.9	16.5	280	5	55	35

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
APR									
10...	77	30	1.7	7.3	321	0	263	129	270
16...	--	--	--	--	--	--	--	--	--
MAY									
01...	140	43	3.1	14	296	0	243	19	410
SEP									
02...	130	49	3.4	11	337	0	276	6.8	240

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR									
10...	21	.1	11	665	.80	1.03	230	50	1400
16...	--	--	--	--	--	--	--	--	--
MAY									
01...	40	.1	23	898	1.20	17.6	190	90	70
SEP									
02...	24	.2	41	705	1.01	156	120	140	20

05123510 DEEP RIVER NEAR UPHAM, ND

LOCATION.--Lat 48°35'03", long 100°51'44", in SW¼NW¼ sec.22, T.159 N., R.79 W., McHenry County, Hydrologic Unit 09010005, 60 ft (18 m) downstream from county highway bridge, 0.8 mi (1.3 km) downstream from Little Deep River, and 6.3 mi (10.1 km) west of Upham.

DRAINAGE AREA.--975 mi² (2,525 km²), of which 605 mi² (1,567 km²) is probably noncontributing.

PERIOD OF RECORD.--September 1957 to September 1980 (discontinued).

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,430 ft (436 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--23 years, 20.4 ft³/s (0.578 m³/s), 14,780 acre-ft/yr (18.2 hm³/yr); median of yearly mean discharges, 0.90 ft³/s (0.025 m³/s), 650 acre-ft/yr (0.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,760 ft³/s (191 m³/s) Apr. 12, 1969, gage height, 18.18 ft (5.541 m); no flow for part or all of each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1951 reached a stage of about 16 ft (4.9 m), discharge, 2,700 ft³/s (76.5 m³/s), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 48 ft³/s (1.36 m³/s) June 5, gage height, 7.29 ft (2.222 m), no peak above base of 50 ft³/s (1.42 m³/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.25	.30	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.50	.30	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	5.0	.30	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	4.0	.25	3.6	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	4.4	.25	36	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	5.6	.20	18	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	4.3	.20	6.4	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	3.5	.20	2.5	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	2.8	.20	1.4	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	2.1	.20	.60	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	1.8	.15	.55	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	1.5	.15	.50	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	1.4	.15	.45	.00	.00	.02
14	.00	.00	.00	.00	.00	.00	5.0	.15	.35	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	6.2	.15	.30	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	5.2	.10	.25	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	4.7	.10	.15	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	4.0	.10	.10	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	3.2	.10	.10	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	2.8	.10	.05	.00	.00	.00
21	.00	.00	.00	.0	.00	.00	2.5	.10	.02	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	1.9	.05	.02	.00	.00	.02
23	.00	.00	.00	.00	.00	.00	1.5	.02	.02	.00	.00	.02
24	.00	.00	.00	.00	.00	.00	1.1	.00	.01	.00	.00	.02
25	.00	.00	.00	.00	.00	.00	.94	.00	.01	.00	.00	.02
26	.00	.00	.00	.00	.00	.00	.76	.00	.01	.00	.00	.02
27	.00	.00	.00	.00	.00	.00	.65	.00	.01	.00	.00	.02
28	.00	.00	.00	.00	.00	.00	.45	.00	.01	.00	.00	.02
29	.00	.00	.00	.00	.00	.00	.35	.00	.01	.00	.00	.02
30	.00	.00	.00	.00	---	.00	.30	.00	.01	.00	.00	.02
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	78.70	3.82	71.43	.00	.00	.20
MEAN	.000	.000	.000	.000	.000	.000	2.62	.12	2.38	.000	.000	.007
MAX	.00	.00	.00	.00	.00	.00	6.2	.30	36	.00	.00	.02
MIN	.00	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	156	7.6	142	.00	.00	.4

CAL YR 1979 TOTAL 19208.24 MEAN 52.6 MAX 2600 MIN .00 AC-FT 38100
WTR YR 1980 TOTAL 154.15 MEAN .42 MAX 36 MIN .00 AC-FT 306

05123600 EGG CREEK NEAR GRANVILLE, ND

LOCATION.--Lat 48°21'18", long 100°49'19", on west line of sec.10, T.156 N., R.79 W., McHenry County, Hydrologic Unit 09010005, on right bank near right downstream wingwall of bridge, 2 mi (3 km) downstream from Hay Coulee, 3.5 mi (5.6 km) upstream from North Lake, and 6 mi (10 km) northeast of Granville.

DRAINAGE AREA.--289 mi^2 (749 km^2), of which 150 mi^2 (388 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1956 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,478.14 ft (450.537 m) National Geodetic Vertical Datum of 1929 (levels by Water and Power Resources Service).

AVERAGE DISCHARGE.--24 years, 6.55 ft^3/s (0.185 m^3/s), 4,750 acre-ft/yr (5.86 hm^3/yr); median of yearly mean discharges, 3.5 ft^3/s (0.10 m^3/s), 2,500 acre-ft/yr (3.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,710 ft^3/s (48.4 m^3/s) Apr. 10, 1969, gage height, 7.28 ft (2.219 m); maximum gage height, 8.10 ft (2.469 m) Apr. 9, 1969, from floodmark, backwater from snow; no flow for long periods each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 83 ft^3/s (2.35 m^3/s) Apr. 1, gage height, 5.05 ft (1.539 m), only peak above base of 20 ft^3/s (0.57 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	40	2.4	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	70	2.0	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	60	1.6	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	50	1.2	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	44	1.0	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	38	.90	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	31	.80	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	27	.70	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	21	.60	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	17	.55	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	13	.50	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	10	.45	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	8.5	.40	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	7.5	.35	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	7.0	.30	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	6.5	.25	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	6.0	.20	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	5.5	.15	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	5.0	.10	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	4.5	.08	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	4.2	.06	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	4.0	.05	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	3.8	.04	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	3.6	.03	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	3.4	.02	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	3.2	.01	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	3.0	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	2.8	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	2.8	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	2.6	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	504.9	14.74	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	16.8	.48	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	70	2.4	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	2.6	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	1000	29	.00	.00	.00	.00

CAL YR 1979 TOTAL 7459.17 MEAN 20.4 MAX 790 MIN .00 AC-FT 14800
WTR YR 1980 TOTAL 519.64 MEAN 1.42 MAX 70 MIN .00 AC-FT 1030

05123600 EGG CREEK NEAR GRANVILLE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	COLOR (PLATINUM COBALT UNITS) (00080)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM, DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
APR												
02...	1530	75	540	--	2.0	--	--	--	--	--	--	--
04...	1310	51	575	--	2.5	--	--	--	--	--	--	--
08...	1030	26	720	7.9	1.0	60	240	130	42	33	58	33
10...	1540	17	820	--	7.5	--	--	--	--	--	--	--
29...	1440	2.8	1100	--	17.5	--	--	--	--	--	--	--

DATE	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--	--
08...	1.6	74	16	110	250	20	.1	7.0	499	493	.68	35.7
10...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
08...	.12	.490	10	2	50	120	<1	0	<3	0	50
10...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--

DATE	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
08...	0	30	30	.1	<10	0	0	150	1.0	6	.00
10...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--

05123700 CUT BANK CREEK AT NORTH LAKE OUTLET NEAR GRANVILLE, ND

LOCATION.--Lat 48°23'10", long 100°46'00", on south line of sec.29, T.157 N., R.78 W., McHenry County, Hydrologic Unit 09010005, on left bank near left downstream wingwall of bridge, 9 mi (14 km) northeast of Granville, and 13.5 mi (21.7 km) east of Deering.

DRAINAGE AREA.--534 mi² (1,383 km²), of which 290 mi² (751 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1956 to September 1980 (discontinued).

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,477.25 ft (450.266 m) National Geodetic Vertical Datum of 1929 (levels by Water and Power Resources Service).

REMARKS.--Natural control by North Lake.

AVERAGE DISCHARGE.--24 years, 6.05 ft³/s (0.171 m³/s), 4,380 acre-ft/yr (5.40 hm³/yr); median of yearly mean discharges, 0.01 ft³/s (<0.001 m³/s), 7.2 acre-ft/yr (0.06 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 780 ft³/s (22.1 m³/s) Mar. 29, 1976, gage height, 4.60 ft (1.402 m); maximum gage height, 4.68 ft (1.427 m) Mar. 27, 1976, backwater from ice; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7.4 ft³/s (0.21 m³/s) Apr. 18, gage height, 2.57 ft (0.783 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	2.0	.85	.30	.00	.00	.01	1.8	.30	.00	.00	.00
2	4.9	2.3	.85	.25	.00	.00	.05	1.8	.20	.00	.00	.00
3	4.8	2.3	.80	.20	.00	.00	.75	1.8	.10	.00	.00	.00
4	4.8	2.4	.80	.15	.00	.00	2.9	1.7	.16	.00	.00	.00
5	4.1	2.3	.75	.10	.00	.00	4.2	1.7	.14	.00	.00	.00
6	4.1	2.0	.70	.05	.00	.00	5.1	1.7	.10	.00	.00	.00
7	4.1	1.9	.70	.02	.00	.00	5.8	1.6	.08	.00	.00	.00
8	4.1	1.7	.70	.00	.00	.00	6.6	1.7	.06	.00	.00	.00
9	4.1	1.5	.70	.00	.00	.00	6.9	1.6	.04	.00	.00	.00
10	4.0	1.5	.70	.00	.00	.00	7.0	1.5	.02	.00	.00	.00
11	3.8	1.2	.67	.00	.00	.00	7.0	1.5	.02	.00	.00	.00
12	3.7	1.2	.65	.00	.00	.00	7.2	1.5	.01	.00	.00	.00
13	3.8	1.0	.62	.00	.00	.00	7.2	1.4	.00	.00	.00	.00
14	3.8	1.0	.62	.00	.00	.00	7.3	1.5	.00	.00	.00	.00
15	3.7	1.0	.62	.00	.00	.00	7.3	1.4	.00	.00	.00	.00
16	3.1	.98	.62	.00	.00	.00	7.3	1.3	.00	.00	.00	.00
17	3.3	.98	.62	.00	.00	.00	7.3	1.2	.00	.00	.00	.00
18	3.3	.98	.60	.00	.00	.00	7.4	1.0	.00	.00	.00	.00
19	3.2	.98	.60	.00	.00	.00	7.3	1.2	.00	.00	.00	.00
20	3.3	.95	.60	.00	.00	.00	7.2	1.1	.00	.00	.00	.00
21	3.0	.95	.60	.00	.00	.00	7.2	1.0	.00	.00	.00	.00
22	3.0	.95	.55	.00	.00	.00	5.5	1.0	.00	.00	.00	.00
23	3.1	.95	.55	.00	.00	.00	6.5	1.1	.00	.00	.00	.00
24	3.1	.93	.50	.00	.00	.00	5.8	1.0	.00	.00	.00	.00
25	3.1	.93	.50	.00	.00	.00	4.8	.95	.00	.00	.00	.00
26	3.0	.93	.45	.00	.00	.00	4.1	.90	.00	.00	.00	.00
27	2.9	.90	.45	.00	.00	.00	4.0	.80	.00	.00	.00	.00
28	2.8	.90	.40	.00	.00	.00	3.3	.70	.00	.00	.00	.00
29	2.7	.90	.40	.00	.00	.00	2.0	.60	.00	.00	.00	.00
30	2.6	.90	.35	.00	---	.00	1.8	.50	.00	.00	.00	.00
31	2.1	---	.35	.00	---	.00	---	.40	---	.00	.00	---
TOTAL	110.3	39.41	18.87	1.07	.00	.00	156.81	38.75	1.23	.00	.00	.00
MEAN	3.56	1.31	.61	.035	.000	.000	5.23	1.25	.041	.000	.000	.000
MAX	4.9	2.4	.85	.30	.00	.00	7.4	1.8	.30	.00	.00	.00
MIN	2.1	.90	.35	.00	.00	.00	.01	.40	.00	.00	.00	.00
AC-FT	219	78	37	2.1	.00	.00	311	77	2.4	.00	.00	.00

CAL YR 1979 TOTAL 8007.08 MEAN 21.9 MAX 285 MIN .00 AC-FT 15880
WTR YR 1980 TOTAL 366.46 MEAN 1.00 MAX 7.4 MIN .00 AC-FT 727

05123750 CUT BANK CREEK AT UPHAM, ND

LOCATION.--Lat 48°34'29", long 100°44'39", in SE¼SE¼SW¼ sec.21, T.159 N., R.78 W., McHenry County, Hydrologic Unit 09010005, on left bank 50 ft (15 m) downstream from county highway bridge, and 0.5 mi (0.8 km) southwest of Upham.

DRAINAGE AREA.--722 mi² (1,870 km²), of which about 450 mi² (1,166 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to September 1980 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,422.77 ft (433.660 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--6 years, 13.8 ft³/s (0.391 m³/s), 10,000 acre-ft/yr (12.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 820 ft³/s (23.2 m³/s) Apr. 1, 1976, gage height, 7.24 ft (2.207 m), from high-water mark; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10 ft³/s (0.28 m³/s) Apr. 21, gage height, 3.3 ft (1.01 m); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	1.4	1.0	.10	.00	.00	2.0	8.5	2.0	.00	.00	.00
2	4.3	1.4	.90	.10	.00	.00	6.0	8.0	1.6	.00	.00	.00
3	4.2	1.4	.90	.08	.00	.00	5.0	7.5	1.4	.00	.00	.00
4	4.1	1.3	.80	.06	.00	.00	4.0	7.0	1.6	.00	.00	.00
5	4.0	1.2	.80	.04	.00	.00	3.5	6.5	2.0	.00	.00	.00
6	3.6	1.1	.80	.02	.00	.00	3.0	6.0	1.8	.00	.00	.00
7	3.1	1.1	.80	.01	.00	.00	2.5	5.9	1.6	.00	.00	.00
8	2.9	1.1	.70	.00	.00	.00	2.0	5.8	1.4	.00	.00	.00
9	2.7	1.1	.70	.00	.00	.00	1.5	5.7	1.2	.00	.00	.00
10	2.6	1.1	.70	.00	.00	.00	2.0	5.6	1.0	.00	.00	.00
11	2.5	1.1	.70	.00	.00	.00	3.5	5.5	.80	.00	.00	.00
12	2.2	1.1	.60	.00	.00	.00	4.5	5.4	.60	.00	.00	.00
13	2.1	1.1	.60	.00	.00	.00	6.0	5.3	.40	.00	.00	.00
14	1.9	1.1	.60	.00	.00	.00	7.0	5.2	.30	.00	.00	.00
15	1.8	1.1	.50	.00	.00	.00	8.5	5.1	.20	.00	.00	.00
16	1.6	1.2	.50	.00	.00	.00	8.7	5.0	.10	.00	.00	.00
17	1.5	1.2	.50	.00	.00	.00	8.9	4.9	.09	.00	.00	.00
18	1.5	1.2	.40	.00	.00	.00	9.0	4.8	.07	.00	.00	.00
19	1.4	1.2	.40	.00	.00	.00	9.2	4.6	.05	.00	.00	.00
20	1.4	1.2	.40	.00	.00	.00	9.5	4.4	.03	.00	.00	.00
21	1.4	1.2	.40	.00	.00	.00	9.8	4.2	.01	.00	.00	.00
22	1.4	1.2	.40	.00	.00	.00	9.7	4.0	.00	.00	.00	.00
23	1.4	1.2	.40	.00	.00	.00	9.6	3.8	.00	.00	.00	.00
24	1.4	1.2	.30	.00	.00	.00	9.5	3.6	.00	.00	.00	.00
25	1.4	1.2	.20	.00	.00	.00	9.4	3.4	.00	.00	.00	.05
26	1.5	1.2	.20	.00	.00	.00	9.3	3.2	.00	.00	.00	.20
27	1.5	1.2	.20	.00	.00	.00	9.2	3.0	.00	.00	.00	.40
28	1.5	1.1	.20	.00	.00	.00	9.2	2.8	.00	.00	.00	.80
29	1.5	1.0	.20	.00	.00	.00	9.1	2.6	.00	.00	.00	.80
30	1.5	1.0	.15	.00	---	.00	9.0	2.4	.00	.00	.00	.60
31	1.5	---	.15	.00	---	.00	---	2.2	---	.00	.00	---
TOTAL	69.8	35.2	16.10	.41	.00	.00	200.1	151.9	18.25	.00	.00	2.85
MEAN	2.25	1.17	.52	.013	.000	.000	6.67	4.90	.61	.000	.000	.095
MAX	4.4	1.4	1.0	.10	.00	.00	9.8	8.5	2.0	.00	.00	.80
MIN	1.4	1.0	.15	.00	.00	.00	1.5	2.2	.00	.00	.00	.00
AC-FT	138	70	32	.8	.00	.00	397	301	36	.00	.00	5.7

CAL YR 1979 TOTAL 4425.00 MEAN 12.1 MAX 258 MIN .00 AC-FT 8780
WTR YR 1980 TOTAL 494.61 MEAN 1.35 MAX 9.8 MIN .00 AC-FT 981

05123750 CUT BANK CREEK AT UPHAM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to September 1980 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT									
04...	1510	4.1	1120	--	9.5	--	--	--	--
NOV									
06...	1030	1.1	1310	--	1.0	--	--	--	--
27...	1605	1.2	1400	--	.0	--	--	--	--
APR									
02...	1720	5.6	345	--	2.0	--	--	--	--
08...	1230	1.9	505	7.7	1.0	50	160	81	26
29...	1105	9.1	860	--	16.0	--	--	--	--
SEP									
29...	1400	.79	1650	7.7	12.0	50	680	310	110

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT									
04...	--	--	--	--	--	--	--	--	--
NOV									
06...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
APR									
02...	--	--	--	--	--	--	--	--	--
08...	23	36	30	1.2	54	18	79	140	19
29...	--	--	--	--	--	--	--	--	--
SEP									
29...	98	120	27	2.0	140	19	370	550	39

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT									
04...	--	--	--	--	--	--	--	--	--
NOV									
06...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
APR									
02...	--	--	--	--	--	--	--	--	--
08...	.0	4.1	322	316	.44	1.65	.60	.490	90
29...	--	--	--	--	--	--	--	--	--
SEP									
29...	.2	11	1460	1170	1.99	3.11	.00	.100	0

05123760 DEEP RIVER BELOW CUT BANK CREEK NEAR UPHAM, ND

LOCATION.--Lat 48°36'14", long 100°47'41", in SW¼SW¼SW¼ sec.7, T.159 N., R.78 W., McHenry County, Hydrologic Unit 09010005, at bridge 0.5 mi (0.8 km) below Cut Bank Creek, and about 3.5 mi (5.6 km) northwest of Upham at bridge on county highway.

DRAINAGE AREA.--1,722 mi² (4,460 km²), of which about 1,070 mi² (2,770 km²) is probably noncontributing.

PERIOD OF RECORD.--Water years 1975 to September 1980 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1980 (discontinued).
WATER TEMPERATURE: October 1974 to September 1980 (discontinued).

REMARKS.--Discharge computed from records at stations 05123510 Deep River near Upham and 05123750 Cut Bank Creek at Upham. No flow Jan. 6 to Apr. 1, June 23 to Sept. 21.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,100 micromhos Mar. 22, 1976; minimum daily, 240 micromhos Apr. 4, 1980.
WATER TEMPERATURE: Maximum daily, 28.0°C July 6, 1975; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,900 micromhos Dec. 26; minimum daily, 240 micromhos Apr. 4.
WATER TEMPERATURE: Maximum daily, 22.5°C June 22; minimum daily, 0.0°C Dec. 15, 25 and Apr. 7.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
APR									
29...	1200	E10	865	E7.9	17.0	50	330	100	57
SEP									
29...	1500	E2.5	920	9.6	12.0	50	310	62	31

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
APR									
29...	46	58	26	1.4	76	18	230	190	28
SEP									
29...	57	83	36	2.0	95	12	250	200	42

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	BORON, DIS-SOLVED (UG/L AS B) (01020)
APR								
29...	.2	6.9	583	543	.79	.00	.180	110
SEP								
29...	.2	1.9	719	577	.98	.00	.110	40

E - Estimated.

05125760 DEEP RIVER BELOW CUT BANK CREEK NEAR UPHAM, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1010	1200	1500				---	---	1180			---
2	1030	1250	1400				---	860	1180			---
3	1040	1200	1400				---	---	1150			---
4	1040	1250	1400				240	900	1200			---
5	1040	1300	1400				---	---	1100			---
6	1030	1250	1250				---	900	1130			---
7	1030	1300	1500				420	---	1030			---
8	1040	---	1300				---	850	925			---
9	1030	1250	1400				300	900	925			---
10	1200	1200	1500				---	900	850			---
11	1150	1290	1430				600	750	850			---
12	1180	1250	---				---	925	825			---
13	1200	1280	1500				---	1000	800			---
14	1200	1250	1700				500	950	825			---
15	1230	1250	1700				---	990	825			---
16	1200	1200	---				---	1000	800			---
17	1200	1200	---				500	1000	800			---
18	1200	1200	1700				---	1100	800			---
19	1200	1200	1700				525	1050	800			---
20	1150	1250	1700				575	1050	800			---
21	1200	1200	1700				675	1080	800			---
22	---	1250	1800				---	1100	775			---
23	1000	1230	1750				775	1130	---			---
24	1250	1210	1710				---	1100	---			---
25	1240	1210	1700				750	1150	---			---
26	1210	1300	1900				---	1100	---			900
27	1180	1300	1600				---	1150	---			900
28	1190	---	---				---	1150	---			950
29	1200	1400	---				825	1130	---			925
30	1200	1400	---				---	1150	---			900
31	1210	---	---				---	1130	---			---
MEAN	1140	1260	1570				557	1020	926			915

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.5	3.0	2.0				---	---	17.5			---
2	11.0	1.0	2.0				---	20.0	16.5			---
3	9.0	2.0	2.0				---	---	16.5			---
4	9.0	2.0	2.0				1.0	19.0	17.0			---
5	9.0	2.0	2.0				---	---	18.0			---
6	8.0	7.0	2.0				---	15.0	18.0			---
7	8.5	2.5	2.0				.0	---	16.0			---
8	8.0	---	2.0				---	10.0	15.5			---
9	7.5	1.0	2.0				2.0	11.5	16.5			---
10	8.0	1.5	1.5				---	11.5	18.0			---
11	9.0	2.0	1.0				2.0	11.0	20.0			---
12	7.0	2.5	---				---	11.0	20.0			---
13	6.5	2.5	5.0				---	10.0	21.5			---
14	5.5	3.0	1.0				4.0	11.0	20.0			---
15	8.5	2.5	.0				---	11.5	19.5			---
16	9.0	3.0	---				---	13.5	19.0			---
17	8.0	2.5	---				6.0	14.5	20.5			---
18	8.0	3.0	1.5				---	17.0	18.5			---
19	7.0	2.5	1.0				9.0	17.0	18.0			---
20	7.0	2.5	1.0				11.0	17.0	19.0			---
21	5.0	3.5	2.0				17.0	18.0	20.0			---
22	---	3.5	1.5				---	19.0	22.5			---
23	3.5	3.0	1.0				13.0	19.0	---			---
24	4.0	2.5	1.0				---	18.5	---			---
25	3.5	2.5	.0				14.0	19.5	---			---
26	3.5	1.5	1.0				---	20.0	---			10.5
27	4.0	2.0	1.0				---	19.0	---			10.5
28	4.5	---	---				---	19.0	---			17.0
29	5.5	1.5	---				18.0	18.5	---			12.5
30	5.5	1.0	---				---	18.0	---			13.0
31	5.0	---	---				---	18.0	---			---
MEAN	7.0	2.5	1.5				8.0	16.0	18.5			12.5

05123900 BOUNDARY CREEK NEAR LANDA, ND

LOCATION.--Lat 48°48'46", long 100°51'46", at east line sec.35, T.162 N., R.79 W., Bottineau County, Hydrologic Unit 09010003, on right bank 80 ft (24 m) downstream from bridge on county road, 5 mi (8 km) upstream from mouth, and 6 mi (10 km) southeast of Landa.

DRAINAGE AREA.--230 mi² (596 km²), of which about 60 mi² (160 km²) is probably noncontributing.

PERIOD OF RECORD.--September 1957 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,420.03 ft (432.825 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Some regulation since 1974 by Soil Conservation Service dam, combined capacity, 6,900 acre-ft (8.51 hm³).

AVERAGE DISCHARGE.--23 years, 12.6 ft³/s (0.357 m³/s), 9,130 acre-ft/yr (11.3 hm³/yr); median of yearly mean discharges, 5.4 ft³/s (0.15 m³/s), 3,900 acre-ft/yr (4.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,580 ft³/s (101 m³/s) Apr. 9, 1969, gage height, 12.70 ft (3.871 m); maximum gage height, 12.90 ft (3.932 m) Apr. 1, 1976, backwater from ice and snow; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 60 ft³/s (1.70 m³/s) Apr. 9, gage height, 8.41 ft (2.563 m); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.53	.00	.00	.00	.16
2	.00	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00	.16
3	.00	.00	.00	.00	.00	.00	.00	.47	.00	.00	.00	.16
4	.00	.00	.00	.00	.00	.00	.50	.44	.00	.00	.00	.16
5	.00	.00	.00	.00	.00	.00	.80	.41	1.8	.00	.00	.14
6	.00	.00	.00	.00	.00	.00	.90	.38	2.8	.00	.00	.12
7	.00	.00	.00	.00	.00	.00	1.2	.35	1.7	.00	.00	.11
8	.00	.00	.00	.00	.00	.00	1.0	.32	1.1	.00	.00	.10
9	.00	.00	.00	.00	.00	.00	5.0	.29	.80	.00	.00	.09
10	.00	.00	.00	.00	.00	.00	26	.26	.80	.00	.00	.08
11	.00	.00	.00	.00	.00	.00	14	.23	.60	.00	.00	.08
12	.00	.00	.00	.00	.00	.00	11	.20	.40	.00	.00	1.0
13	.00	.00	.00	.00	.00	.00	8.0	.18	.30	.00	.00	25
14	.00	.00	.00	.00	.00	.00	6.0	.16	.20	.00	.00	10
15	.00	.00	.00	.00	.00	.00	6.0	.14	.16	.00	.00	7.8
16	.00	.00	.00	.00	.00	.00	5.0	.12	.14	.00	.00	5.6
17	.00	.00	.00	.00	.00	.00	4.5	.10	.12	.00	.00	3.8
18	.00	.00	.00	.00	.00	.00	2.6	.08	.12	.00	.00	4.0
19	.00	.00	.00	.00	.00	.00	2.5	.06	.10	.00	.00	3.8
20	.00	.00	.00	.00	.00	.00	1.8	.04	.08	.00	.00	3.4
21	.00	.00	.00	.00	.00	.00	1.1	.02	.08	.00	.00	3.0
22	.00	.00	.00	.00	.00	.00	1.0	.01	.06	.00	.00	3.2
23	.00	.00	.00	.00	.00	.00	.95	.00	.04	.00	.06	3.2
24	.00	.00	.00	.00	.00	.00	.90	.00	.02	.00	.12	3.1
25	.00	.00	.00	.00	.00	.00	.85	.00	.02	.00	.18	2.5
26	.00	.00	.00	.00	.00	.00	.80	.00	.00	.00	.18	2.5
27	.00	.00	.00	.00	.00	.00	.75	.00	.00	.00	.18	2.5
28	.00	.00	.00	.00	.00	.00	.70	.00	.00	.00	.18	2.4
29	.00	.00	.00	.00	.00	.00	.65	.00	.00	.00	.17	2.3
30	.00	.00	.00	.00	---	.00	.60	.00	.00	.00	.17	2.3
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.16	---
TOTAL	.00	.00	.00	.00	.00	.00	105.10	5.29	11.44	.00	1.40	92.76
MEAN	.000	.000	.000	.000	.000	.000	3.50	.17	.38	.000	.045	3.09
MAX	.00	.00	.00	.00	.00	.00	26	.53	2.8	.00	.18	25
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08
AC-FT	.00	.00	.00	.00	.00	.00	208	10	23	.00	2.8	184

CAL YR 1979 TOTAL 5349.90 MEAN 14.7 MAX 1050 MIN .00 AC-FT 10610
WTR YR 1980 TOTAL 215.99 MEAN .59 MAX 26 MIN .00 AC-FT 428

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND
(International gaging station)
(Radiochemical station)

LOCATION.--Lat 48°59'47", long 100°57'29", in SW¼SE¼ sec.30, T.164 N., R.79 W., Bottineau County, Hydrologic Unit 09010003, on left bank 1,200 ft (370 m) upstream from second crossing of international boundary, 1 mi (2 km) downstream from Fish and Wildlife Service Dam 357, 7 mi (11 km) northeast of Westhope, 11 mi (18 km) downstream from Boundary Creek, and at mile 154.5 (248.6 km).

DRAINAGE AREA.--16,900 mi^2 (43,800 km^2), approximately, of which about 10,300 mi^2 (26,700 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to October 1929, April 1930 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1338: 1932. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,402.45 ft (427.467 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 28, 1938, nonrecording gage at site 6.3 mi (10.1 km) upstream at datum 2.52 ft (0.768 m) higher.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by dams on Souris River and tributaries, combined capacity, about 321,000 acre-ft (3,960 hm^3). Diversion at Eaton Dam for irrigation of about 7,600 acres (30.8 km^2) and other small diversions for irrigation and municipal supply above station.

COOPERATION.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

AVERAGE DISCHARGE.--50 years (1930-80), 264 ft^3/s (7.476 m^3/s), 191,300 acre-ft/yr (236 hm^3/yr); median of yearly mean discharges, 138 ft^3/s (3.91 m^3/s), 100,000 acre-ft/yr (123 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft^3/s (357 m^3/s) Apr. 26, 1976, gage height, 19.16 ft (5.840 m); maximum daily reverse flow, 35 ft^3/s (0.99 m^3/s) Apr. 8, 1943, caused by backwater from downstream tributary inflow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 284 ft^3/s (8.04 m^3/s) Apr. 24, gage height, 6.67 ft (2.033 m); minimum daily, 0.32 ft^3/s (0.009 m^3/s) Nov. 14, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	27	.36	.97	23	44	31	203	21	28	22	36
2	23	28	.42	1.0	23	44	32	203	20	30	21	33
3	22	28	.70	1.1	23	44	43	203	21	30	21	31
4	22	28	.57	1.1	22	44	68	190	22	29	26	30
5	20	25	.57	1.1	22	44	66	190	22	30	23	29
6	19	25	.53	1.0	35	44	61	186	21	31	28	29
7	20	12	.53	1.0	45	44	91	190	24	29	24	29
8	20	4.3	.49	1.0	45	44	138	190	23	28	24	27
9	20	2.2	.45	1.0	45	43	132	194	22	29	22	27
10	20	1.2	.49	1.0	45	45	120	182	23	29	22	28
11	21	.70	.53	1.0	45	46	98	182	22	29	24	29
12	29	.49	.49	1.0	45	42	87	149	27	27	21	33
13	46	.45	.49	.95	45	40	76	87	34	26	21	28
14	46	.32	.53	.90	45	29	71	112	31	29	23	23
15	46	.32	.53	.90	45	13	58	112	27	30	31	21
16	44	.36	.53	.90	45	8.3	46	112	29	28	26	25
17	42	.49	.57	.90	45	6.0	46	112	29	28	25	46
18	31	.61	.57	.95	45	5.1	74	112	28	26	22	48
19	30	.61	.57	1.0	45	4.5	91	112	26	27	22	51
20	30	.53	.57	1.0	45	4.2	66	112	24	27	27	51
21	28	.53	.57	1.0	44	4.1	58	112	24	28	27	49
22	28	.49	.57	1.0	44	4.1	65	112	19	28	41	49
23	29	.39	.57	1.0	44	4.2	122	100	19	27	27	53
24	29	.39	.57	15	44	4.2	175	76	25	24	24	69
25	29	.45	.61	30	44	4.4	208	74	24	24	24	71
26	29	.49	.70	28	44	5.0	114	74	24	24	27	71
27	29	.45	.74	27	44	5.5	122	73	27	24	41	71
28	29	.36	.74	26	44	6.2	170	62	28	24	38	71
29	28	.36	.78	25	44	7.5	250	43	27	23	40	71
30	28	.36	.92	24	---	14	203	36	27	20	42	71
31	27	---	.97	24	---	28	---	26	---	22	41	---
TOTAL	888	189.85	18.23	221.77	1174	725.3	2982	3921	740	838	847	1300
MEAN	28.6	6.33	.59	7.15	40.5	23.4	99.4	126	24.7	27.0	27.3	43.3
MAX	46	28	.97	30	45	46	250	203	34	31	42	71
MIN	19	.32	.36	.90	22	4.1	31	26	19	20	21	21
AC-FT	1760	377	36	440	2330	1440	5910	7780	1470	1660	1680	2580

CAL YR 1979 TOTAL 312269.08 MEAN 856 MAX 5830 MIN .32 AC-FT 619400
WTR YR 1980 TOTAL 13845.15 MEAN 37.8 MAX 250 MIN .32 AC-FT 27460

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued
(National stream-quality accounting network station)
(Radiochemical station)
(Pesticide station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-64, 1966 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1956 to September 1964, October 1966 to September 1968, October 1973 to current year.
WATER TEMPERATURES: October 1954 to September 1955, October 1956 to September 1959, October 1960 to September 1964, October 1966 to September 1968, October 1973 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,750 micromhos Feb. 21, 1961; minimum daily, 232 micromhos Apr. 18, 1957.
WATER TEMPERATURES: Maximum recorded, 28.5°C July 4, 1975; minimum recorded, 0.0°C on many days during winter months.

REMARKS.--Records are good except for loss during the winter months when the probes froze into the ice and during June and July when the temperature probe was too near the water surface.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
OCT											
10...	1915	19	800	8.7	--	9.5	15	10.3	--	52	K20
NOV											
08...	1630	3.8	930	8.4	--	2.0	9.3	13.3	103	67	<5
DEC											
04...	1230	.60	1090	8.1	--	2.0	4.5	10.2	--	63	<2
JAN											
10...	1645	E1.0	1430	7.6	--	.0	3.0	3.0	>21	68	<2
FEB											
05...	1630	22	1720	7.3	--	1.0	1.6	2.2	15	80	<2
MAR											
04...	1345	44	2620	7.4	--	.5	5.1	.0	0	130	K10
APR											
09...	1810	133	900	7.0	--	2.5	4.0	.5	3	51	<5
29...	1345	291	465	8.4	--	16.5	5.7	9.7	100	23	K4
JUN											
03...	1645	19	640	8.7	--	20.5	6.4	9.6	104	54	K1
JUL											
10...	1230	28	850	9.7	27.5	26.0	7.2	6.7	81	110	<2
AUG											
06...	1915	30	900	8.0	--	18.0	42	5.8	30	87	120
SEP											
03...	1315	31	910	8.7	--	16.5	48	7.2	73	51	K80

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)
OCT											
10...	K27	240	0	43	33	95	45	2.7	110	11	260
NOV											
08...	K40	260	0	47	34	110	64	3.0	120	12	310
DEC											
04...	<2	340	0	62	46	130	62	3.1	140	13	380
JAN											
10...	<2	460	0	90	58	180	45	3.6	190	5.9	580
FEB											
05...	<2	600	0	110	80	210	42	3.7	230	21	620
MAR											
04...	<10	1000	0	190	130	330	41	4.5	360	32	1010
APR											
09...	K70	290	2	59	35	83	37	2.1	96	13	290
29...	K7	140	11	30	16	37	35	1.4	44	6.8	130
JUN											
03...	K2	280	2	57	34	86	38	2.2	100	14	280
JUL											
10...	K1	210	58	29	33	120	53	3.6	130	15	150
AUG											
06...	140	230	0	40	31	110	49	3.2	130	16	230
SEP											
03...	260	280	23	49	39	110	44	2.8	130	16	260

E - Estimated.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)
OCT											
10...	150	21	.2	1.0	534	511	.73	27.4	20	.01	.02
NOV											
08...	160	19	.2	.2	645	569	.88	6.62	14	.08	.02
DEC											
04...	220	33	.3	2.5	740	736	1.01	1.20	5	.12	.01
JAN											
10...	260	46	.3	4.8	1010	995	1.37	--	6	.08	.04
FEB											
05...	330	51	.3	5.5	1230	1180	1.67	73.7	0	.13	.00
MAR											
04...	550	82	.4	24	1940	1950	2.64	230	18	.00	.01
APR											
09...	170	25	.2	10	608	571	.83	218	5	.01	.01
29...	81	11	.2	2.3	289	263	.39	227	4	.00	.00
JUN											
03...	170	23	.2	1.9	587	555	.80	31.4	34	.06	.01
JUL											
10...	250	38	.3	12	635	588	.86	48.0	8	.00	.00
AUG											
06...	210	29	.3	18	618	594	.84	50.4	47	.00	.39
SEP											
03...	210	29	.3	17	634	627	.86	53.8	47	.00	.02

DATE	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)
OCT											
10...	.03	.03	.13	.13	.17	1.6	1.3	1.7	.30	1.4	1.7
NOV											
08...	.10	.12	.20	.07	.09	1.9	1.8	2.1	.20	1.9	2.2
DEC											
04...	.13	.10	.35	.16	.21	2.6	2.0	2.9	.70	2.2	3.0
JAN											
10...	.12	.21	.35	.41	.53	36	1.7	36	34	2.1	36
FEB											
05...	.13	.04	.23	.43	.55	2.6	.97	2.8	1.4	1.4	2.9
MAR											
04...	.01	.02	1.3	1.1	1.4	2.6	2.6	3.9	.20	3.7	3.9
APR											
09...	.02	.01	.54	.51	.66	1.3	1.2	1.8	.10	1.7	1.8
29...	.00	.01	.00	.00	.00	1.1	.71	1.1	.39	.71	1.1
JUN											
03...	.07	.07	.22	.00	.00	--	1.2	--	--	1.2	--
JUL											
10...	.00	.00	.22	.04	.05	5.4	2.6	5.6	3.0	2.6	5.6
AUG											
06...	.37	.38	.94	.92	1.2	2.8	1.5	3.7	1.3	2.4	4.1
SEP											
03...	.00	.00	.12	.00	.00	2.5	1.8	2.6	.80	1.8	2.6

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
OCT											
10...	1.4	7.7	.190	.58	.130	4	0	4	100	30	70
NOV											
08...	2.0	9.7	.110	.34	.050	--	--	--	--	--	--
DEC											
04...	2.3	13	.250	.77	.200	--	--	--	--	--	--
JAN											
10...	2.3	160	.390	1.2	.300	5	0	5	300	200	100
FEB											
05...	1.4	13	.660	2.0	.400	--	--	--	--	--	--
MAR											
04...	3.7	17	1.500	4.6	1.400	--	--	--	--	--	--
APR											
09...	1.7	8.1	.540	1.7	.290	5	2	3	200	100	100
29...	.72	4.9	.090	.28	.040	--	--	--	--	--	--
JUN											
03...	1.3	--	.200	.61	.160	5	0	6	100	10	90
JUL											
10...	2.6	25	.270	.83	.150	--	--	11	100	30	70
AUG											
06...	2.8	18	.350	1.1	.210	--	--	--	--	--	--
SEP											
03...	1.8	12	.330	1.0	.180	--	--	--	--	--	--

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)
OCT											
10...	0	0	<1	10	0	10	0	0	<3	6	5
NOV											
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
JAN											
10...	0	0	<1	0	0	0	2	0	<3	4	4
APR											
09...	1	0	<1	0	0	0	3	0	<3	1	1
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	0	0	<1	20	20	0	1	<1	<3	6	5
JUL											
10...	0	0	<1	10	10	0	0	0	<3	7	5
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
SEP											
03...	--	--	--	--	--	--	--	--	--	--	--

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT										
10...	1	590	590	<10	6	6	0	50	50	3
NOV										
08...	--	--	--	--	--	--	--	--	--	--
DEC										
04...	--	--	--	--	--	--	--	--	--	--
JAN										
10...	0	260	230	30	2	0	2	400	0	420
APR										
09...	0	840	670	170	3	3	0	660	0	1600
29...	--	--	--	--	--	--	--	--	--	--
JUN										
03...	1	360	360	<10	4	4	0	40	20	20
JUL										
10...	2	320	260	60	6	6	0	60	40	20
AUG										
06...	--	--	--	--	--	--	--	--	--	--
SEP										
03...	--	--	--	--	--	--	--	--	--	--

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)
OCT 10...	.0	.0	.1	6	2	4	0	0	0	0
NOV 08...	--	--	--	--	--	--	--	--	--	0
DEC 04...	--	--	--	--	--	--	--	--	--	--
JAN 10...	.2	.1	.1	4	0	7	0	0	0	0
FEB 05...	--	--	--	8	--	--	--	--	--	0
MAR 04...	--	--	--	--	--	--	--	--	--	--
APR 09...	.0	.0	.1	4	4	0	0	0	0	0
29...	--	--	--	2	--	--	--	--	--	0
JUN 03...	.1	.0	.1	3	1	2	0	0	0	0
JUL 10...	--	--	.0	5	3	2	--	--	0	0
AUG 06...	--	--	--	8	--	--	--	--	--	0

DATE	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) (01076)	SILVER, DISSOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90) (80050)
OCT 10...	0	0	20	20	<3	<7.7	<.7	11	1.4	11
JAN 10...	0	0	10	10	<3	--	--	--	--	--
FEB 05...	--	--	20	--	--	--	--	--	--	--
MAR 04...	--	--	--	--	--	--	--	--	--	--
APR 09...	0	0	20	20	<3	<7.2	.7	21	1.1	21
29...	--	--	30	--	--	--	--	--	--	--
JUN 03...	0	0	40	40	<3	--	--	--	--	--
JUL 10...	0	0	30	30	<3	--	--	--	--	--
AUG 06...	--	--	100	--	--	--	--	--	--	--

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DISSOLVED, EXTRACTION (UG/L) (80020)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLORDANE, TOTAL (UG/L) (39350)
OCT 10...	1.5	.07	1.8	17	16	.9	.00	--	--	--
NOV 08...	--	--	--	--	--	--	.00	ND	ND	ND
DEC 04...	--	--	--	--	--	--	.00	--	--	--
JAN 10...	--	--	--	31	30	.6	--	--	--	--
FEB 05...	--	--	--	--	--	--	.00	ND	ND	ND
MAR 04...	--	--	--	--	--	--	.01	--	--	--
APR 09...	1.1	.06	1.2	14	14	.4	.01	--	--	--
29...	--	--	--	--	--	--	.00	--	--	--
JUN 03...	--	--	--	--	22	.4	.00	--	--	--
JUL 10...	--	--	--	--	29	2.9	.01	--	--	--
AUG 06...	--	--	--	--	--	--	.00	--	--	--
SEP 03...	--	--	--	--	--	--	.01	--	--	--

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)
OCT 10...	--	--	--	--	--	--	--	--	--	--
NOV 08...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC 04...	--	--	--	--	--	--	--	--	--	--
JAN 10...	--	--	--	--	--	--	--	--	--	--
FEB 05...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	PARA-THION, TOTAL (UG/L) (39540)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
OCT 10...	--	--	--	--	--	--	--	--	--	--
NOV 08...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC 04...	--	--	--	--	--	--	--	--	--	--
JAN 10...	--	--	--	--	--	--	--	--	--	--
FEB 05...	ND	ND	ND	ND	ND	ND	ND	--	--	--

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 10...	--	--	--	--	--	--	24	1.2	92
NOV 08...	--	.080	.080	.000	.000	29	11	.11	100
DEC 04...	--	--	--	--	--	--	4	.01	100
JAN 10...	--	.080	.000	.090	.000	37	12	--	76
FEB 05...	--	--	--	--	--	--	16	.96	59
MAR 04...	1000	--	--	--	--	--	12	1.4	31
APR 09...	--	--	--	--	--	--	12	4.3	92
29...	19000	.157	.157	.180	.070	20	12	9.4	71
JUN 03...	4400	--	--	--	--	--	10	.53	86
JUL 10...	560000	38.4	38.4	50.6	7.64	37	12	.91	91
AUG 06...	48000	--	--	--	--	--	60	8.9	98
SEP 03...	160000	--	--	--	--	--	54	4.6	99

Whole water ND - Not detected at 0.01 µg/L level.
Bed material ND - Not detected at 0.1 µg/mg level.

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	788	776	850	844								
2	788	783	850	844								
3	786	776	859	850								
4	779	774	866	856								
5	791	774	875	863								
6	795	781	906	872								
7	798	784	907	891								
8	801	796	936	903								
9	805	799	937	923								
10	811	803	940	924								
11	814	805	951	937								
12	811	805	962	945								
13	811	805	955	952								
14	817	803	962	930								
15	820	806	963	949								
16	825	811	970	953								
17	828	811	967	953								
18	825	811	957	940								
19	825	814	947	920								
20	825	811	947	924								
21	828	820	961	937								
22	828	820	972	955								
23	831	820	987	965								
24	834	820	994	973								
25	831	815	1010	987								
26	840	820	1000	980								
27	843	832	1020	1000								
28	837	826	1030	1010								
29	840	829	---	---								
30	847	829	---	---								
31	850	835	---	---								
MONTH	850	774	1030	844								

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	479	471	832	814	776	759	975	950	905	901
2	---	---	486	475	854	833	791	773	1010	969	901	901
3	---	---	495	482	857	825	809	768	993	974	904	897
4	---	---	493	482	841	788	800	788	962	915	917	907
5	---	---	508	495	813	791	828	803	917	877	921	914
6	---	---	523	506	813	798	825	816	891	875	937	924
7	---	---	535	522	832	807	828	813	897	881	948	941
8	1020	972	548	524	838	829	838	825	900	890	955	947
9	972	888	550	534	838	829	854	831	893	880	965	958
10	866	838	574	550	838	823	877	832	886	864	991	972
11	834	798	592	576	826	780	891	845	885	876	972	945
12	795	773	599	580	801	774	892	869	885	875	949	931
13	775	762	621	600	832	801	900	870	888	881	949	922
14	767	756	623	604	823	808	891	852	891	881	931	900
15	774	747	628	607	836	814	879	831	883	877	927	918
16	764	737	630	596	839	830	832	807	883	851	936	909
17	744	687	632	609	836	799	855	824	873	854	936	927
18	686	618	638	629	799	775	863	841	866	847	940	931
19	626	586	652	621	799	783	884	867	875	859	931	918
20	585	549	663	627	790	758	898	882	874	852	922	904
21	567	486	704	681	787	758	978	889	855	852	922	918
22	481	421	722	686	781	764	1010	907	858	842	922	918
23	498	437	725	684	770	756	976	909	873	857	918	877
24	487	444	771	723	761	739	934	913	889	872	922	918
25	497	460	792	773	750	742	942	928	892	885	918	900
26	461	455	814	792	775	756	950	932	894	888	913	900
27	473	457	828	808	778	762	955	944	891	887	900	891
28	477	467	832	823	767	740	967	949	897	887	891	886
29	469	465	835	822	759	740	965	922	906	896	895	855
30	480	465	841	825	759	751	977	913	906	899	891	862
31	---	---	851	829	---	---	960	938	905	902	---	---
MONTH	1020	421	851	471	857	739	1010	759	1010	842	991	855

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	14.0	11.0	3.5	1.5								
2	13.0	11.5	1.5	1.0								
3	12.0	10.0	2.0	.5								
4	10.5	8.5	2.0	1.0								
5	10.5	9.5	3.0	1.5								
6	10.0	8.0	3.5	1.5								
7	9.5	9.0	2.5	1.5								
8	9.5	9.0	2.0	1.5								
9	9.0	8.0	1.5	1.0								
10	9.5	8.0	1.5	1.0								
11	9.5	8.5	1.5	1.0								
12	8.0	6.5	1.0	.5								
13	6.5	5.0	1.0	.5								
14	7.5	5.0	1.5	.5								
15	8.5	6.0	1.5	.5								
16	9.0	8.0	2.0	.5								
17	8.5	7.5	2.0	.5								
18	9.0	7.0	2.5	.5								
19	8.0	7.0	2.0	1.0								
20	7.5	6.5	1.5	.5								
21	6.5	5.0	.5	.5								
22	5.0	4.0	---	---								
23	4.0	3.0	---	---								
24	4.0	2.0	---	---								
25	3.5	2.5	---	---								
26	3.5	3.0	---	---								
27	5.5	3.0	---	---								
28	6.0	3.5	---	---								
29	5.5	5.0	---	---								
30	6.0	5.0	---	---								
31	5.0	3.5	---	---								
MONTH	14.0	2.0	3.5	.5								

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	19.0	16.5					---	---	17.5	15.5
2	---	---	20.5	17.0					---	---	17.0	15.0
3	---	---	20.5	18.0					---	---	17.0	15.5
4	---	---	20.0	18.0					---	---	17.0	13.5
5	---	---	18.0	16.0					---	---	18.0	14.0
6	---	---	16.0	13.5					19.0	16.0	21.5	16.0
7	---	---	13.5	11.5					20.0	17.5	21.5	18.0
8	---	---	14.0	10.0					20.5	17.5	20.5	17.5
9	2.5	.0	14.5	11.5					20.0	17.5	18.0	15.5
10	3.0	.0	13.5	11.5					23.0	17.5	18.0	14.0
11	3.5	.0	12.5	11.0					21.5	18.5	17.0	14.5
12	4.5	.5	14.0	11.0					23.0	19.5	15.0	13.5
13	5.0	1.0	12.5	11.5					22.0	19.5	15.5	13.0
14	5.5	1.5	14.5	11.0					24.0	18.5	16.0	13.0
15	6.0	2.0	16.5	12.5					20.5	19.0	14.5	11.5
16	7.5	2.5	17.0	14.0					19.0	16.0	12.0	10.5
17	8.0	3.5	19.5	15.0					20.5	15.0	10.5	8.5
18	8.0	4.0	21.0	17.0					21.5	15.5	11.0	8.5
19	9.5	5.0	21.0	18.5					24.0	19.0	9.5	9.5
20	11.5	5.5	20.0	18.0					23.5	20.0	12.0	9.5
21	12.0	7.0	22.0	18.5					20.0	17.5	12.5	11.5
22	9.0	6.5	23.0	19.5					21.5	17.0	11.5	9.5
23	11.0	7.5	21.5	19.0					21.5	17.0	11.0	9.0
24	11.0	8.5	21.0	18.0					25.5	18.5	11.0	9.5
25	14.0	10.0	21.0	18.5					22.5	20.0	9.5	8.5
26	14.0	10.5	22.5	19.5					21.5	17.5	10.0	7.5
27	16.5	12.5	22.5	19.5					19.0	17.0	11.0	9.0
28	19.0	14.5	22.5	20.5					21.5	16.0	12.0	9.5
29	18.5	16.0	22.5	19.5					20.0	17.5	14.5	12.5
30	19.0	15.0	21.5	18.5					21.0	16.0	15.0	14.0
31	---	---	---	---					17.5	16.0	---	---
MONTH	19.0	.0	23.0	10.0					25.5	15.0	21.5	7.5

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAR 4,80	APR 29,80	JUN 3,80	JUL 10,80	AUG 6,80	SEP 3,80
TIME	1345	1345	1645	1230	1915	1315
TOTAL CELLS/ML	1000	19000	4400	560000	48000	160000
DIVERSITY: DIVISION	1.1	1.6	0.8	0.0	0.1	0.7
.CLASS	1.1	1.6	0.8	0.0	0.1	0.7
..ORDER	1.7	1.7	0.9	0.0	0.1	0.7
...FAMILY	1.7	1.9	0.9	0.0	1.0	0.9
....GENUS	1.7	2.6	1.2	0.6	1.0	1.1
	1.7	2.6	1.2	0.6	1.0	1.8

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	*	0	*	0
...OOCYSTACEAE												
....ANKISTRODESMUS	14	1	990	5	--	-	--	-	--	-	960	1
....CHODATELLA	--	-	--	-	*	0	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	440	2	--	-	--	-	*	0	1300	1
....KIRCHNERIELLA	--	-	--	-	58	1	--	-	--	-	--	-
....OOCYSTIS	--	-	110	1	58	1	--	-	*	0	1300	1
....SELENASTRUM	--	-	110	1	--	-	--	-	--	-	1900	1
....TETRAEDRON	--	-	--	-	--	-	--	-	*	0	*	0
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	440	2	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	3100#	16	87	2	--	-	*	0	11000	7
....TETRASTRUM	--	-	440	2	--	-	--	-	*	0	2600	2
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	130	13	--	-	--	-	--	-	--	-	960	1
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	3600#	21	43	1	--	-	--	-	2900	2
....STEPHANODISCUS	--	-	2200	12	--	-	--	-	--	-	--	-
..PENNALES												
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	*	0
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	29	1	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	--	-	110	1	*	0	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	--	-	--	-	*	0	--	-	*	0	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...OCHROMONADACEAE												
....OCHROMONAS	--	-	--	-	--	-	--	-	*	0	--	-
...SYNURACEAE												
....SYNURA	58	6	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	360	8	--	-	--	-	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	140	14	6700#	36	--	-	--	-	13000#	27	110000#	68
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-	20000	12
....DACTYLOCOCCOPSIS	--	-	110	1	--	-	--	-	--	-	--	-
....GOMPHOSPHAERIA	--	-	--	-	--	-	--	-	--	-	3200	2
..HORMOGONALES												
...NOSTOCACEAE												
....APHANIZOMENON	--	-	--	-	3500#	80	470000#	84	340000#	71	--	-
...OSCILLATORIACEAE												
....LYNGBYA	610#	61	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	200	5	88000#	16	--	-	4500	3
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	43	4	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	110	1	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06185500 MISSOURI RIVER NEAR CULBERTSON, MT

LOCATION.--Lat 48°07'24", long 104°28'30", in SE¼NW¼ sec.3, T.27 N., R.56 E., Richland County, Hydrologic Unit 10060005, on right bank at downstream side of bridge on State Highway 16, 3 mi (5 km) southeast of Culbertson, 9.6 mi (15.4 km) downstream from Big Muddy Creek, and at mile 1,620.76 (2,607.80 km).

DRAINAGE AREA.--91,557 mi² (237,133 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1941 to December 1951, April 1958 to current year.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,883.4 ft (574.06 m) National Geodetic Vertical Datum of 1929, (Corps of Engineers bench mark). July 1 to Nov. 6, 1941, water-stage recorder at site 400 ft (120 m) upstream at datum 0.11 ft (0.034 m) higher. Nov. 7, 1941, to Aug. 17, 1950, water-stage recorder at site 580 ft (177 m) downstream at present datum. Aug. 18, 1950, to Dec. 31, 1951, nonrecording gage on bridge at present datum. Apr. 1, 1958, to Nov. 1, 1967, water-stage recorder at site 580 ft (177 m) downstream at present datum.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Flow partly regulated by Fort Peck Lake and many other reservoirs above station. Diversions for irrigation of about 1,030,400 acres (4,170 km²) above station.

AVERAGE DISCHARGE.--30 years (1943-51, 1958-80, after operational level at Fort Peck Lake was reached), 10,930 ft³/s (309.5 m³/s), 7,919,000 acre-ft/yr (9.76 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,200 ft³/s (2,210 m³/s) Mar. 26, 1943, gage height, 14.80 ft (4.511 m), from rating curve extended above 30,000 ft³/s (850 m³/s); maximum gage height observed, 19.66 ft (5.992 m) Apr. 14, 1979, backwater from ice jam; minimum daily discharge, 575 ft³/s (16.3 m³/s) Nov. 22, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 14,700 ft³/s (416 m³/s) Feb. 7; maximum gage height observed, 12.23 ft (3.728 m) Dec. 21, backwater from ice; minimum daily discharge, 6,180 ft³/s (175 m³/s) May 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9070	7870	7200	12000	13200	12200	8900	6360	7130	12500	13000	14000
2	9070	7650	7600	12000	13500	12100	9390	6180	7150	12900	13100	13800
3	9230	7790	8000	11800	13800	11600	8970	6400	7180	13300	13100	13800
4	9390	7700	8200	12100	14000	11800	8410	6460	7220	13400	13100	14100
5	9130	7770	7600	11800	14300	12200	8230	6570	7200	13200	13100	14200
6	9490	7790	7200	10800	14200	12200	8410	6460	7330	12600	13200	14000
7	9330	7790	7000	9800	14700	12000	8360	6460	7380	12300	13200	12900
8	9130	7860	7200	9600	14100	12100	8640	6960	7650	12400	13100	13000
9	9020	7880	7200	9300	14000	12500	8940	7200	8030	12800	13400	12500
10	8890	7910	7200	9500	14200	12200	8790	7180	8050	13700	13800	12400
11	8740	7960	7100	10000	13800	12100	8050	7130	8050	13500	13700	12900
12	8670	7910	8600	10400	13500	12200	8000	7200	8410	12600	13700	12600
13	8230	7740	10300	11100	13400	12100	7930	7330	8940	13400	13300	12200
14	8110	7580	12700	11800	13400	12300	7540	7150	8860	13700	13100	12600
15	7660	7700	12200	12400	13800	12400	8030	7260	8940	13600	13200	12600
16	7340	7790	11600	12800	14300	12400	8120	7290	8910	13200	13400	12300
17	7520	7750	12000	13000	14500	12500	7790	7090	8760	13200	13700	12200
18	7590	7930	12800	13100	13800	12700	7980	7020	8410	13300	14000	12200
19	7940	7870	12000	13000	13000	12800	7770	7040	8680	13100	13800	12200
20	7540	7610	11600	13000	12000	12700	7700	7090	8270	12800	13400	12200
21	7750	7540	11500	13000	12000	12200	7650	7040	8150	12800	13800	12200
22	7730	8040	11600	12900	12300	12000	7310	7260	8740	12700	13800	12100
23	7590	8140	11700	12800	12400	11800	7200	7380	8990	13400	13800	12100
24	7620	8300	11800	12800	12600	11200	7180	7350	9690	13000	13600	12000
25	8150	8150	12100	12800	12600	9700	7200	7220	10200	12600	13300	12300
26	7910	7950	12400	13100	12500	8700	6960	7240	11100	12900	13400	12200
27	7540	7630	12700	13200	12300	8700	6850	7090	12900	13000	13400	12100
28	7420	7740	12700	13000	12000	8200	6780	7090	12900	13000	13300	12100
29	7020	7790	12800	12400	12000	8600	6680	7130	13300	13000	13300	12300
30	7240	7600	12500	12600	---	8800	6570	7130	12900	12800	13500	12200
31	7450	---	12400	12800	---	8800	---	7130	---	13100	13900	---
TOTAL	255190	234730	319500	370700	386200	353600	236530	216890	269420	403800	416500	380300
MEAN	8232	7824	10310	11960	13320	11410	7878	6996	8981	13030	13440	12680
MAX	9490	8300	12800	13200	14700	12800	9390	7380	13300	13700	14000	14200
MIN	7020	7540	7000	9300	12000	8200	6570	6180	7130	12300	13000	12000
AC-FT	506200	465600	633700	735300	766000	701400	468800	430200	534400	800900	826100	754300

CAL YR 1979 TOTAL 5549930 MEAN 15210 MAX 52000 MIN 7000 AC-FT 11010000

WTR YR 1980 TOTAL 3845160 MEAN 10500 MAX 14700 MIN 6180 AC-FT 7623000

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946, 1965 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1965 to current year.

REMARKS.--Once-daily water temperatures are available in the Montana District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 941 micromhos Jan. 10, 1980; minimum daily, 338 micromhos Mar. 30, 1967.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 941 micromhos Jan. 10; minimum daily, 740 micromhos Sept. 27, 30.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE, WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	WEATHER (WMO CODE NUMBER) (00041)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT												
19...	1300	8000	830	8.2	16.0	9.5	23	1	10.0	96	K15	K4
NOV												
29...	1200	7790	892	8.1	-5.0	.0	18	0	13.1	94	K2	<1
DEC												
27...	1200	12700	804	8.0	5.0	.0	16	0	12.0	86	K10	K5
JAN												
23...	1400	12900	870	8.3	6.0	.0	7.0	2	14.2	104	<1	K7
FEB												
27...	1300	12200	808	8.1	7.0	.0	12	1	12.5	92	K2	K1
APR												
04...	1500	8250	832	8.3	16.0	5.5	34	0	11.2	95	<1	400
18...	1400	8000	878	8.1	25.0	13.0	30	1	9.9	101	K7	<1
MAY												
23...	1530	7380	820	8.6	33.0	20.0	33	0	8.4	100	K22	K8
JUN												
27...	1100	12700	813	8.5	17.0	16.0	75	2	8.5	92	150	130
JUL												
30...	1600	12800	800	8.3	32.0	18.5	34	0	8.4	95	K39	K23
SEP												
03...	1230	13600	730	8.2	15.0	15.0	25	1	8.5	90	K32	40
25...	1300	12000	790	8.4	11.0	12.0	33	0	9.6	94	K20	K27

DATE	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT												
19...	260	110	61	26	70	36	1.9	75	4.8	150	250	8.8
NOV												
29...	280	110	65	28	80	38	2.1	85	4.5	170	280	9.6
DEC												
27...	250	88	58	25	70	38	1.9	74	4.1	160	240	9.6
JAN												
23...	270	110	63	27	76	38	2.0	81	4.6	160	250	8.9
FEB												
27...	260	95	61	25	72	38	2.0	76	4.2	160	260	11
APR												
04...	260	100	60	27	76	38	2.0	--	4.3	160	260	9.5
18...	260	97	60	26	74	38	2.0	--	4.8	160	240	9.1
MAY												
23...	280	120	65	28	75	37	2.0	--	4.8	160	250	11
JUN												
27...	260	100	60	27	71	37	1.9	--	4.6	160	240	8.4
JUL												
30...	250	84	59	26	66	36	1.8	--	4.0	170	220	8.7
SEP												
03...	260	98	61	27	66	35	1.8	--	4.6	150	220	11
25...	250	95	57	25	61	35	1.7	--	3.9	150	210	9.5

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)
OCT 19...	.7	7.1	533	519	.72	11500	.16	.13	.00	.00	.71	.56
NOV 29...	.7	7.2	562	578	.76	11800	.05	.11	.01	.02	.41	--
DEC 27...	.4	6.9	546	512	.74	18700	.10	.38	.00	.47	.47	--
JAN 23...	.6	7.2	551	534	.75	19200	.14	.13	.03	.03	.45	.40
FEB 27...	.7	6.6	534	537	.73	17600	.10	.13	.04	.39	.28	--
APR 04...	.6	6.1	549	540	.75	12200	.04	.04	.01	.01	.89	.49
18...	.7	6.1	572	517	.78	12400	.00	.03	.00	.00	1.9	.54
MAY 23...	.6	7.9	539	540	.73	10700	.02	.01	.01	.02	.85	.62
JUN 27...	.7	6.3	524	514	.71	16000	.08	.00	.11	.00	.68	.46
JUL 30...	.7	6.7	522	494	.71	18900	.12	.14	.00	.00	1.6	1.6
SEP 03...	.7	7.2	508	500	.69	18700	.04	.06	.02	.08	.48	--
25...	.7	6.8	525	464	.71	17000	.01	.00	.00	.03	.48	.37

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)
OCT 19...	.71	.56	.15	.87	.69	.00	.00	3.9	.040	.12	.010	--
NOV 29...	.42	--	--	.47	.71	.01	.03	2.1	.050	.15	.020	3
DEC 27...	.47	--	--	.57	1.3	.00	.61	2.5	.030	.09	.010	--
JAN 23...	.48	.43	.05	.62	.56	.04	.04	2.7	.020	.06	.010	--
FEB 27...	.32	--	--	.42	1.7	.05	.50	1.9	.020	.06	.010	4
APR 04...	.90	.50	.40	.94	.54	.01	.01	4.2	.080	.25	.010	--
18...	1.9	.54	1.4	1.9	.57	.00	.00	8.4	.090	.28	.010	--
MAY 23...	.86	.64	.22	.88	.65	.01	.03	3.9	.010	.03	.020	4
JUN 27...	.79	.46	.33	.87	.46	.13	.00	3.9	.930	2.9	--	--
JUL 30...	1.6	1.6	.00	1.7	1.7	.00	.00	7.6	.080	.25	.020	--
SEP 03...	.50	--	--	.54	1.3	.02	.10	2.4	.060	.18	.000	3
25...	.48	.40	.08	.49	.40	.00	.04	2.2	.080	.25	.030	--

DATE	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT 19...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 29...	0	3	300	300	0	0	0	0	0	0	0	0
FEB 27...	0	4	300	300	40	1	0	<1	0	0	0	1
APR 04...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	3	1	100	30	70	0	0	0	0	0	0	1
SEP 03...	0	3	0	0	40	0	--	<1	0	0	0	0
25...	--	--	--	--	--	--	--	--	--	--	--	--

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT 19...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 29...	0	0	0	0	0	2600	2600	20	7	6	1	40
FEB 27...	0	<3	14	13	1	660	650	10	3	0	8	10
APR 04...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	1	0	10	4	6	2300	1300	980	8	8	0	50
JUN 27...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 30...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	--	<3	5	3	2	1200	--	<10	3	3	0	10
25...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT 19...	--	--	--	--	--	--	--	--	--	--	--
NOV 29...	30	10	.4	.4	.0	6	5	1	1	1	0
FEB 27...	4	6	.2	.1	.1	5	4	1	1	0	1
APR 04...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	10	40	.2	.1	.1	7	4	3	1	0	1
SEP 03...	6	4	.7	.3	.4	2	0	4	1	0	1
25...	--	--	--	--	--	--	--	--	--	--	--

DATE	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)
OCT 19...	--	--	--	--	--	--	3.5	--	--	--	--	--
NOV 29...	1	1	0	70	40	30	--	18	.0	ND	ND	ND
DEC 27...	0	--	--	--	--	--	4.8	--	--	--	--	--
JAN 23...	--	--	--	--	--	--	5.2	--	--	--	--	--
FEB 27...	0	0	0	20	20	<3	--	12	1.0	ND	ND	ND
APR 04...	1	--	--	--	--	--	6.0	--	--	--	--	--
18...	--	--	--	--	--	--	5.0	--	--	--	--	--
MAY 23...	0	0	0	30	20	9	--	4.8	.8	--	--	--
JUN 27...	--	--	--	--	--	--	6.3	--	--	--	--	--
JUL 30...	--	--	--	--	--	--	10	--	--	--	--	--
SEP 03...	0	0	0	20	20	5	--	7.3	.2	--	--	--
25...	0	--	--	--	--	--	4.8	--	--	--	--	--

Whole water ND - Not detected at 0.01 ug/L level.
Bed material ND - Not detected at 0.1 ug/mg level.

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDRIN, TOTAL (UG/L) (39390)	TOTAL TRI-THION (UG/L) (39786)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)
OCT 19...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 29...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 27...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	PARA-THION, TOTAL (UG/L) (39540)	TOX-APHENE, TOTAL (UG/L) (39400)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 19...	--	--	--	--	--	--	--	--	--	109	2350	61
NOV 29...	ND	ND	ND	ND	ND	ND	ND	ND	330	129	2710	--
DEC 27...	--	--	--	--	--	--	--	--	--	36	1230	--
JAN 23...	--	--	--	--	--	--	--	--	--	51	1780	--
FEB 27...	ND	ND	ND	ND	ND	--	--	--	--	54	1780	93
APR 04...	--	--	--	--	--	--	--	--	1500	467	10400	24
APR 18...	--	--	--	--	--	--	--	--	--	303	6540	39
MAY 23...	--	--	--	--	--	--	--	--	--	153	3050	64
JUN 27...	--	--	--	--	--	--	--	--	810	443	15200	73
JUL 30...	--	--	--	--	--	--	--	--	610	301	10400	48
SEP 03...	--	--	--	--	--	--	--	--	590	192	7050	61
SEP 25...	--	--	--	--	--	--	--	--	950	146	4730	66

Whole water ND - Not detected at 0.01 ug/L level.
Bed material ND - Not detected at 0.1 ug/mg level.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	807	851	880	825	865	823	790	808	816	763	782	750
2	806	839	871	839	810	840	830	813	839	760	780	755
3	802	830	850	853	830	845	831	811	840	764	780	760
4	802	820	831	865	823	881	831	801	837	763	780	757
5	801	826	821	840	828	832	840	800	833	767	779	758
6	806	831	813	848	829	860	840	809	821	770	780	757
7	817	834	815	842	828	861	830	820	822	770	781	760
8	810	832	888	832	811	871	840	812	825	770	780	759
9	806	828	842	934	812	846	839	800	821	768	771	751
10	807	820	841	941	838	870	902	795	820	766	779	760
11	807	819	850	892	822	869	882	794	825	768	781	758
12	813	811	861	870	820	811	880	795	821	788	783	748
13	818	818	878	902	805	840	870	796	811	780	788	759
14	820	826	870	905	863	839	836	803	817	780	785	757
15	821	823	863	869	868	829	819	808	826	778	780	759
16	820	821	851	862	861	821	829	802	819	774	780	758
17	820	816	854	851	868	821	839	795	820	770	771	758
18	819	810	860	846	841	821	842	794	820	770	779	750
19	821	803	855	851	841	819	839	799	820	769	785	750
20	823	811	850	845	830	810	830	802	818	768	790	749
21	829	820	810	840	830	817	831	809	820	769	790	750
22	820	831	813	839	840	815	830	810	830	768	782	743
23	822	819	821	838	841	820	831	802	821	768	780	746
24	828	816	830	832	830	812	831	802	820	767	774	742
25	820	821	831	870	833	817	825	804	819	770	778	748
26	820	825	827	872	830	808	823	809	815	770	780	744
27	811	833	821	865	815	841	826	811	811	769	780	740
28	818	841	819	940	833	850	826	815	810	769	780	749
29	821	862	822	890	838	846	819	814	820	770	780	750
30	821	880	821	902	---	810	811	810	798	769	779	740
31	830	---	819	849	---	801	---	800	---	770	771	---
MEAN	816	827	840	866	834	834	836	805	821	770	780	752

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 29,79	APR 4,80	JUN 27,80	JUL 30,80	SEP 3,80	SEP 25,80
TIME	1200	1500	1100	1600	1230	1300
TOTAL CELLS/ML	330	1500	810	610	590	950
DIVERSITY: DIVISION	0.9	0.4	1.6	0.8	1.4	1.5
.CLASS	1.4	0.4	1.6	0.8	1.4	1.5
..ORDER	1.9	1.2	1.9	1.8	1.5	1.8
...FAMILY	2.8	2.0	2.5	2.2	2.3	2.3
....GENUS	3.1	2.3	2.5	2.5	2.3	3.2

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	13	2	--	-	--	-	13	1
...OOCYSTACEAE												
....ANKISTRODESMUS	76#	23	28	2	13	2	26	4	13	2	52	5
....CHLORELLA	40	12	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	13	2	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	64	7
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	13	1
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	100#	17	210#	22
....SCENEDESMUS	--	-	--	-	52	6	52	9	--	-	52	5
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	52	5
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CARTERIA	--	-	--	-	--	-	13	2	--	-	--	-
....CHLAMYDOMONAS	5	2	47	3	13	2	13	2	--	-	13	1
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	50#	15	350#	23	65	8	170#	28	13	2	52	5
....MELOSIRA	--	-	--	-	--	-	39	6	--	-	--	-
....SKELETONEMA	--	-	75	5	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....RHOICOSPHENIA	5	2	--	-	26	3	--	-	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	15	5	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	45	14	150	10	13	2	13	2	--	-	--	-
...FRAGILARIACEAE												
....ASTERIONELLA	--	-	760#	49	--	-	--	-	--	-	--	-
....SYNEDRA	20	6	28	2	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	37	2	13	2	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	10	3	37	2	13	2	13	2	26	4	--	-
...NITZSCHIACEAE												
....NITZSCHIA	30	9	9	1	260#	32	250#	40	100#	17	100	11
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...OCHROMONADACEAE												
....DINOBRYON	35	11	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	13	1
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	26	3	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	210#	22
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-	120	12
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	150#	26	--	-
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	310#	38	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-	180#	30	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....TRACHELOMONAS	--	-	19	1	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	13	2	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06185600 MISSOURI RIVER STAGE GAGE NO. 4 NEAR NOHLY, MT

LOCATION.--Lat 48°02'10", long 104°09'40", in NE¼ sec.1, T.26 N., R.58 E., Richland County, Hydrologic Unit 10060005, on right bank 4.5 mi (7.2 km) northwest of Nohly, and at mile 1,595.7 (2,567.5 km).

DRAINAGE AREA.--93,000 mi² (241,000 km²), approximately.

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft (566.928 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 18, 1962 at datum 60.00 ft (18.288 m) lower.

REMARKS.--Stage regulated by Fort Peck Reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 21.20 ft (6.462 m) Mar. 23, 1960, present datum; minimum daily recorded, 6.87 ft (2.094 m) Apr. 18, 1963.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.21	10.62					---	9.89	10.26	12.65	12.86	13.20
2	11.20	10.55					---	9.74	10.15	12.75	12.91	13.16
3	11.25	10.60					---	9.73	10.13	12.91	12.88	13.14
4	11.32	10.56					---	9.86	10.14	12.94	13.05	13.20
5	11.29	10.58					---	9.85	10.24	12.96	13.06	13.25
6	11.39	10.60					---	9.86	10.48	12.82	12.94	13.27
7	11.36	10.62					---	9.79	10.56	12.65	12.86	13.03
8	11.25	10.67					---	9.92	10.65	12.65	12.85	12.94
9	11.18	10.68					---	10.16	10.83	12.77	12.96	12.85
10	11.16	10.66					---	10.17	10.87	13.03	13.06	12.65
11	11.08	10.72					---	10.19	10.90	13.23	13.06	12.76
12	11.05	10.71					---	10.15	10.87	12.83	13.09	12.95
13	10.86	10.66					---	10.27	11.23	12.94	12.98	12.67
14	10.73	10.57					---	10.21	11.12	13.16	12.82	12.71
15	10.60	10.57					---	10.19	11.24	13.15	12.84	12.75
16	10.39	---					10.67	10.25	11.32	13.11	13.01	12.66
17	10.45	---					10.58	10.28	11.31	13.01	13.14	12.67
18	10.56	---					10.55	10.22	11.10	13.11	13.13	12.76
19	10.72	---					10.67	10.19	11.13	13.07	13.12	12.74
20	10.60	---					10.46	10.18	11.12	13.03	13.03	12.75
21	10.59	---					10.66	10.14	10.87	12.98	13.12	12.79
22	10.64	---					10.38	10.20	11.05	12.97	13.12	12.76
23	10.55	---					10.29	10.30	11.28	13.05	13.12	12.76
24	10.64	---					10.21	10.33	11.46	13.13	13.11	12.78
25	10.78	---					10.26	10.14	11.77	12.77	13.08	12.83
26	10.82	---					10.18	10.21	11.96	12.86	13.04	12.86
27	10.62	---					10.08	10.20	12.49	12.92	13.02	12.84
28	10.45	---					10.06	10.04	12.81	12.90	12.96	12.81
29	10.34	---					10.00	10.35	12.70	12.92	12.94	12.90
30	10.34	---					9.93	10.07	12.89	12.92	13.00	12.93
31	10.56	---					---	10.16	---	12.84	13.11	---
TOTAL	335.98	---					---	313.24	334.93	401.03	403.27	386.37
MEAN	10.84	---					---	10.10	11.16	12.94	13.01	12.88
MAX	11.39	---					---	10.35	12.89	13.23	13.14	13.27
MIN	10.34	---					---	9.73	10.13	12.65	12.82	12.65

06185650 MISSOURI RIVER STAGE GAGE NO. 5 AT NOHLY, MT

LOCATION.--Lat 48°00'10", long 104°05'30", in SE¼ sec.16, T.26 N., R.59 E., Richland County, Hydrologic Unit 10060005, at downstream side of bridge, 0.2 mi (0.3 km) northwest of Nohly, and at mile 1,587.7 (2,554.6 km).

DRAINAGE AREA.--93,000 mi² (241,000 km²), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,800.00 ft (548.640 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Stage regulated by Fort Peck Reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 77.22 ft (23.537 m) Mar. 15, 1972; minimum daily recorded, 59.12 ft (18.020 m) Nov. 22, 1964.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63.52	63.03				---	67.83			---	65.18	---
2	63.50	62.94				---	67.87			---	65.26	---
3	63.51	62.93				---	67.73			---	65.21	---
4	63.60	62.92				---	65.24			---	65.31	65.34
5	63.58	62.90				---	63.72			---	65.33	65.43
6	63.62	---				---	63.59			---	65.29	65.44
7	63.63	---				---	63.56			---	65.16	65.26
8	63.54	---				---	63.51			---	65.15	65.08
9	63.51	---				---	63.53			---	65.24	65.05
10	63.48	---				---	63.64			---	65.32	64.82
11	63.41	---				---	63.48			---	65.36	64.89
12	63.38	---				---	63.27			---	63.35	65.09
13	63.30	---				---	63.23			---	65.28	---
14	63.15	---				---	63.18			---	65.08	---
15	63.09	---				---	63.06			---	---	---
16	62.86	---				---	63.22			---	---	---
17	62.85	---				---	---			65.31	---	---
18	62.90	---				---	---			65.42	---	---
19	63.03	---				---	---			65.40	---	---
20	62.94	---				68.80	---			65.35	---	---
21	62.92	---				68.82	---			65.30	---	---
22	63.01	---				68.81	---			65.36	---	---
23	62.91	---				68.77	---			65.38	---	---
24	62.95	---				68.77	---			65.50	---	---
25	63.12	---				68.76	---			65.19	---	---
26	63.13	---				68.40	---			65.22	---	---
27	62.99	---				67.70	---			65.28	---	---
28	62.83	---				67.28	---			65.27	---	---
29	62.73	---				67.21	---			65.25	---	---
30	62.68	---				67.22	---			65.27	---	---
31	62.87	---				67.52	---			65.20	---	---
TOTAL	1958.54	---				---	---			---	---	---
MEAN	63.18	---				---	---			---	---	---
MAX	63.63	---				---	---			---	---	---
MIN	62.68	---				---	---			---	---	---

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT

LOCATION.--Lat 47°40'42", long 104°09'22", in SW¼NE¼SW¼ sec.9, T.22 N., R.59 E., Richland County, Hydrologic Unit 10100004, on left bank at Montana-Dakota Utilities Company powerplant, 0.2 mi (0.3 km) downstream from bridge on State Highway 23, 2.5 mi (4.0 km) south of Sidney, 3.0 mi (4.8 km) downstream from Fox Creek, and at mile 29.2 (47.0 km), revised.

DRAINAGE AREA.--69,103 mi² (178,977 km²). Area at site 4.5 mi (7.2 km) upstream, 68,812 mi² (178,223 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to September 1931 (published as "at Intake"), October 1933 to current year. If monthly figures of diversions to Lower Yellowstone Canal at Intake are added to records at this site, records equivalent to those published as Yellowstone River at Glendive (1898-1910, 1931-34) can be obtained. Monthly discharge only for some periods, published in WSP 1309. Monthly figures of diversions into Lower Yellowstone Canal prior to 1951 published in WSP 1309, 1951-60 published in WSP 1729, 1961-65 published in WSP 1916, 1966-70 published in WSP 2116, and 1971 to current year are published in annual reports.

GAGE.--Water-stage recorder. Datum of gage is 1,881.3 ft (573.42 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Jan. 1, 1911, to Sept. 30, 1931, nonrecording gage at site 32 miles (51 km) upstream at different datum. Apr. 9, 1934, to May 16, 1945, water-stage recorder at two sites within 500 ft (150 m) of highway bridge 0.2 mi (0.3 km) upstream and May 17, 1945, to Apr. 3, 1952, nonrecording gage on same bridge at datum 1.36 ft (0.415 m) higher. Apr. 4, 1952, to Nov. 19, 1967, water-stage recorder at site 4.5 mi (7.2 km) upstream at different datum.

REMARKS.--Water-discharge records good except those for winter period, which are poor. Some regulation on tributary streams. Diversion for irrigation of about 1,250,000 acres (5,060 km²) above station. Lower Yellowstone Project Main Canal diverts from left bank in NW¼ sec.36, T.18 N., R.56 E., at Lower Yellowstone diversion dam at Intake about 36.6 mi (58.9 km) upstream for irrigation of about 52,000 acres (210 km²) of which about one-third lies above station.

AVERAGE DISCHARGE.--68 years, 13,100 ft³/s (371.0 m³/s), 9,491,000 acre-ft/yr (11.7 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 159,000 ft³/s (4,500 m³/s) June 2, 1921, gage height, 12.6 ft (3.84 m), site and datum then in use; maximum gage height observed, 21.85 ft (6.660 m) Mar. 22, 1947, site and datum then in use, backwater from ice; minimum discharge, 470 ft³/s (13.3 m³/s) May 17, 1961, gage height, 2.73 ft (0.832 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35,300 ft³/s (1,000 m³/s) June 25, gage height, 11.35 ft (3.459 m); minimum daily discharge, 2,300 ft³/s (65.1 m³/s) Jan. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5220	5310	5600	7200	4500	11500	8400	11500	19500	23600	7460	6600
2	5190	5580	6700	7000	4500	10000	8200	11500	19000	20800	6700	6630
3	5250	5760	7300	6800	4800	9600	8220	11600	18600	19000	6320	6700
4	5280	5610	7800	7000	5600	10000	8470	12100	18400	19000	5970	7230
5	5280	5400	8400	7400	6200	10000	8260	13500	18400	18900	5940	6860
6	5220	5340	8900	7800	6800	9000	8220	13200	18000	18700	5940	6760
7	5280	5310	9600	7600	7000	7400	8120	12900	17400	19400	5880	6670
8	5340	5310	9000	6000	7000	7100	7840	13400	17300	18800	5790	6540
9	5370	5610	9800	3300	7000	7200	7840	13600	16700	16800	5670	6380
10	5340	5640	8500	2800	6800	7500	8080	14700	17300	16000	5430	5790
11	5370	5490	7500	2500	6600	8500	8330	15900	17200	15400	5080	5460
12	5490	5430	7000	2300	6400	9500	8260	15500	16900	15100	5130	5730
13	5670	5370	6800	2400	6400	10400	9090	17500	19200	15300	5080	6000
14	5760	6350	6400	3300	6400	11400	9090	18400	25600	15000	5080	6320
15	5850	6730	6400	3500	6400	12000	9200	16100	28200	14500	5130	6600
16	5850	6760	6000	4500	6400	11800	9240	13500	32000	13700	9390	8050
17	5970	6730	5200	5400	6200	11600	9160	12000	33100	13100	11500	9650
18	6000	6630	4700	7000	6000	11200	9280	10700	31400	12600	7600	10000
19	5970	6600	4100	7200	6000	10600	9800	10100	31400	12200	7260	10000
20	6280	6570	4800	7200	6500	10000	10200	10200	30100	12000	8050	9690
21	6470	6570	5700	6400	7000	9900	10400	11400	29400	11800	7870	9730
22	6510	6400	7000	6000	8000	9700	10500	12300	31000	11100	8050	9730
23	6410	6300	8500	7000	9000	10000	10800	12900	33600	10700	8010	10500
24	6410	6200	8200	7400	10000	10200	11600	16800	34500	10200	7910	11100
25	6600	6000	8100	7600	11000	9600	12100	25500	35000	9460	7460	11000
26	6670	5700	8200	7600	13000	10100	11700	30400	32600	9160	7160	11100
27	6700	5300	8200	7000	14000	9800	11200	33500	29300	8940	7030	11200
28	6670	5000	8200	6400	13000	9600	11300	32500	26000	8620	6830	11100
29	6600	4800	7800	6000	12500	9300	11900	29600	24800	8370	6470	11000
30	6160	5000	7900	5200	---	9100	12200	23800	25000	8370	6630	10800
31	5310	---	7600	4600	---	8900	---	21000	---	7870	6630	---
TOTAL	181490	174800	225900	179400	221000	302700	287000	517600	746900	434490	210450	250920
MEAN	5855	5827	7287	5787	7621	9765	9567	16700	24900	14020	6789	8364
MAX	6700	6760	9800	7800	14000	12000	12200	33500	35000	23600	11500	11200
MIN	5190	4800	4100	2300	4500	7100	7840	10100	16700	7870	5080	5460
AC-FT	360000	346700	448100	355800	438400	600400	569300	1027000	1481000	861800	417400	497700

CAL YR 1979 TOTAL 4227200 MEAN 11580 MAX 47000 MIN 4100 AC-FT 8385000
WTR YR 1980 TOTAL 3732650 MEAN 10200 MAX 35000 MIN 2300 AC-FT 7404000

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1951 to current year.
WATER TEMPERATURES: January 1951 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to current year.

INSTRUMENTATION.--Temperature recorder April to November 1974, May to September 1975, and July 1977 to current year.

REMARKS.--Prior to July 1972, sediment sampling and record computation under supervision of U.S. Army Corps of Engineers. Flow affected by ice during most of winter months.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,780 micromhos Jan. 14, 1951; minimum daily, 193 micromhos Aug. 15, 1964.
WATER TEMPERATURES: Maximum daily, 29.0°C July 23, 1960; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily, 26,800 mg/L May 8, 1975; minimum daily, 8 mg/L Jan. 9, 1973.
SEDIMENT LOADS: Maximum daily, 3,030,000 tons (2,750,000 tonnes) May 8, 1975; minimum daily, 112 tons (102 megagrams) Jan. 12, 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,130 micromhos Jan. 18; minimum daily, 294 micromhos May 28.
WATER TEMPERATURES: Maximum, 25.5°C Aug. 2; minimum, 0.0°C on many days during November to March.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 12,700 mg/L Aug. 17; minimum daily mean, 17 mg/L Jan. 11.
SEDIMENT LOADS: Maximum daily, 394,000 tons (357,000 megagrams) Aug. 17; minimum daily, 112 tons (102 megagrams) Jan. 12.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	WEATHER (WMO CODE NUMBER) (00041)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT												
18...	1300	5920	898	8.2	15.0	12.0	12	0	9.9	99	76	K12
NOV												
27...	1300	5300	928	8.1	-6.0	.0	4.2	73	13.1	95	K5	K23
DEC												
19...	0900	4100	962	8.3	2.0	.0	3.4	1	11.8	86	K3	K16
JAN												
24...	1230	7400	970	8.1	7.0	.0	7.3	2	11.8	87	20	20
FEB												
28...	0900	13000	858	8.2	-5.0	1.0	18	2	11.2	83	K15	260
APR												
03...	1600	8190	1080	8.2	6.5	5.5	140	1	11.1	93	K6	K31
17...	1500	9180	1020	8.5	25.0	11.5	65	0	9.9	96	<1	K7
MAY												
23...	1830	13200	547	8.6	34.0	23.0	200	0	7.2	91	420	130
27...	1400	33700	--	--	--	17.0	--	--	--	--	--	--
27...	1600	33700	--	--	--	17.0	--	--	--	--	--	--
JUN												
25...	1300	34300	425	8.2	26.0	21.0	160	0	7.4	88	140	220
JUL												
31...	1100	7900	770	8.5	30.0	23.0	14	0	7.4	91	50	120
AUG												
28...	1400	6860	860	8.4	23.0	18.5	70	0	8.3	94	K37	60
SEP												
26...	1300	11000	684	8.5	12.5	12.5	65	0	9.8	96	K17	K21

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
18...	290	120	62	33	85	38	2.2	90	4.9	170	260	15
NOV												
27...	320	130	70	35	81	35	2.0	86	5.0	190	280	15
DEC												
19...	320	120	75	31	86	37	2.1	91	5.0	200	270	16
JAN												
24...	320	130	77	32	85	36	2.1	90	4.5	190	270	14
FEB												
28...	290	120	71	28	73	35	1.9	77	3.9	170	260	15
APR												
03...	330	150	83	30	93	38	2.2	--	4.5	180	320	19
17...	300	120	72	30	91	39	2.3	--	4.6	180	300	19
MAY												
23...	170	62	39	18	44	35	1.5	--	3.4	110	130	13
JUN												
25...	160	80	34	19	26	25	.9	--	2.3	83	120	5.5
JUL												
31...	260	97	55	29	68	36	1.8	--	4.1	160	210	10
AUG												
28...	270	97	59	29	78	38	2.1	--	4.6	180	250	15
SEP												
26...	210	74	51	21	57	36	1.7	--	3.9	150	180	10

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)
OCT												
18...	.5	7.6	588	571	.80	9400	.08	.12	.000	--	1.1	--
NOV												
27...	.5	10	624	614	.85	6930	.35	--	.010	--	.44	--
DEC												
19...	.5	10	697	616	.95	7720	.48	.40	.010	.010	.49	.48
JAN												
24...	.5	12	622	612	.85	12400	.61	.61	.090	.080	.35	.20
FEB												
28...	.6	11	573	567	.78	20100	.52	.52	.170	.100	1.0	.22
APR												
03...	.4	7.4	689	667	.94	15200	.23	.23	.060	.060	.90	.50
17...	.5	8.9	645	635	.88	16000	.27	.28	.000	.000	.86	.41
MAY												
23...	.3	17	324	334	.44	11500	.14	.13	.030	.020	1.2	.67
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
25...	.3	10	250	268	.34	23200	.19	.19	.050	.080	.95	1.0
JUL												
31...	.5	19	490	492	.67	10500	.11	.15	.000	.000	1.0	.78
AUG												
28...	.5	9.2	563	548	.77	10400	.37	.04	.020	.010	1.8	.32
SEP												
26...	.4	10	443	418	.60	13200	.17	.20	.000	.010	.87	.73

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	ARSENIC TOTAL (UG/L AS AS) (01002)
OCT												
18...	1.1	.57	.53	1.2	.69	.00	--	5.2	.030	.09	.020	--
NOV												
27...	.45	--	--	.80	2.5	.01	--	3.5	.010	.03	.000	6
DEC												
19...	.50	.49	.01	.98	.89	.01	.01	4.3	.010	.03	.000	--
JAN												
24...	.44	.28	.00	1.1	1.1	.11	.10	4.6	.030	.09	.010	--
FEB												
28...	1.2	.32	.88	1.7	.84	.21	.13	7.6	.020	.06	.010	6
APR												
03...	.96	.56	.40	1.2	.79	.07	.08	5.3	.190	.58	.010	--
17...	.86	.41	.45	1.1	.69	.00	.00	5.0	.120	.37	.020	--
MAY												
23...	1.2	.69	.51	1.3	.82	.04	.03	5.9	.010	.03	.050	7
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
25...	1.0	1.1	.00	1.2	1.3	.06	.10	5.3	.020	.06	.010	--
JUL												
31...	1.0	.78	.22	1.1	.93	.00	.00	4.9	.080	.25	.010	--
AUG												
28...	1.8	.33	1.5	2.2	.37	.02	.01	9.6	.360	1.1	.050	7
SEP												
26...	.87	.74	.13	1.0	.94	.00	.01	4.6	.000	.00	.010	--

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT												
10...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
27...	1	5	200	100	70	0	0	<1	0	0	0	0
FEB												
28...	0	0	300	200	60	0	0	<1	30	30	0	0
APR												
03...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
23...	5	2	100	0	100	0	--	<1	0	0	0	4
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
25...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
31...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
28...	3	4	200	100	60	1	--	<1	20	20	0	6
SEP												
26...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT												
10...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
27...	0	<3	0	0	5	210	180	30	6	5	1	20
FEB												
28...	0	<3	9	8	1	560	550	10	1	0	0	20
APR												
03...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
23...	--	<3	26	22	4	11000	8300	2700	11	11	0	260
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
25...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
31...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
28...	--	<3	21	18	3	1000	940	60	15	15	0	300
SEP												
26...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT											
10...	--	--	--	--	--	--	--	--	--	--	--
NOV											
27...	0	20	.1	.0	.1	4	2	2	1	0	1
FEB											
28...	10	0	.2	.1	.1	1	0	1	2	0	2
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
23...	50	210	.2	.1	.1	13	11	2	1	0	1
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
28...	290	6	.0	.0	.0	25	25	0	2	0	2
SEP											
26...	--	--	--	--	--	--	--	--	--	--	--

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)
OCT												
10...	--	--	--	--	--	--	4.5	--	--	--	--	--
NOV												
27...	0	0	0	110	40	70	--	5.9	.0	ND	ND	ND
DEC												
19...	0	--	--	--	--	--	2.9	--	--	--	--	--
JAN												
24...	--	--	--	--	--	--	3.3	--	--	--	--	--
FEB												
20...	0	0	0	30	30	3	--	9.9	.0	ND	--	ND
APR												
03...	0	--	--	--	--	--	5.0	--	--	--	--	--
17...	--	--	--	--	--	--	6.0	--	--	--	--	--
MAY												
23...	0	0	0	60	40	20	--	4.6	1.7	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
25...	--	--	--	--	--	--	9.5	--	--	--	--	--
JUL												
31...	--	--	--	--	--	--	7.2	--	--	--	--	--
AUG												
20...	0	0	0	70	70	4	--	12	1.7	--	--	--
SEP												
26...	0	--	--	--	--	--	6.5	--	--	--	--	--

DATE	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)	DI-ELDRIN TOTAL (UG/L) (39380)
OCT												
10...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
27...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC												
19...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
24...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
20...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	TOTAL TRI-THION (UG/L) (39786)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39787)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)
OCT												
10...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
27...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC												
19...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
24...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
20...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND

Whole water ND - Not detected at 0.01 ug/L level.
Bed material ND - Not detected at 0.1 ug/mg level.

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)	TOXAPHENE, TOTAL (UG/L) (39400)
OCT												
18...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
27...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC												
19...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
24...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)
OCT												
18...	--	--	--	--	--	50	799	--	--	--	--	--
NOV												
27...	ND	ND	ND	ND	1100	--	--	--	--	--	--	--
DEC												
19...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
24...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
26...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
03...	--	--	--	--	910	363	8050	--	--	--	--	--
17...	--	--	--	--	--	336	8380	--	--	--	--	--
MAY												
23...	--	--	--	--	--	488	17400	--	--	--	--	--
27...	--	--	--	--	--	1280	116000	--	--	--	--	--
27...	--	--	--	--	--	1120	102000	35	57	84	94	100
JUN												
25...	--	--	--	--	1600	516	47600	41	64	81	91	99
JUL												
31...	--	--	--	--	10000	68	1450	--	--	--	--	--
AUG												
28...	--	--	--	--	24000	629	11700	82	98	100	--	--
SEP												
26...	--	--	--	--	15000	--	--	--	--	--	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT												
18...	--	86	11	74	99	100	--	--	--	--	--	--
APR												
03...	--	80	75	96	100	--	--	--	--	--	--	--
17...	--	58	64	94	99	100	--	--	--	--	--	--
MAY												
23...	--	77	88	100	--	--	--	--	--	--	--	--
27...	--	77	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
25...	100	--	38	86	100	--	--	--	--	--	--	--
JUL												
31...	--	88	31	68	75	76	76	77	77	80	87	100
AUG												
28...	--	--	51	93	100	--	--	--	--	--	--	--
SEP												
26...	--	--	--	--	--	--	--	--	--	--	--	--

Whole water ND - Not detected at 0.01 ug/L level.
Bed material ND - Not detected at 0.1 ug/mg level.

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	811	856	968	918	930	840	929	652	479	399	689	780
2	814	869	979	916	949	829	969	650	487	424	690	780
3	818	829	980	930	962	828	1000	629	491	439	702	790
4	821	799	962	949	982	834	1020	598	507	478	721	769
5	824	801	948	951	1000	861	1020	582	490	505	711	759
6	822	821	931	955	1020	852	1000	560	470	490	720	742
7	821	840	907	972	1030	841	992	531	468	484	721	740
8	817	836	906	976	1020	838	1000	511	472	480	728	739
9	814	811	881	981	1000	841	1020	502	490	470	729	735
10	818	820	869	990	969	902	1050	493	509	463	732	740
11	821	812	872	1000	931	980	1060	489	501	480	755	740
12	820	821	882	1020	904	1000	1050	461	507	516	761	735
13	822	830	903	1040	871	988	1030	433	503	530	768	749
14	827	832	931	1060	873	970	998	422	601	530	771	760
15	842	821	944	1090	891	929	1000	411	483	539	781	755
16	834	802	972	1110	896	888	1000	447	421	559	790	740
17	832	874	980	1120	902	850	991	471	440	561	831	740
18	832	871	971	1130	911	851	998	485	375	579	860	720
19	839	877	973	1100	930	870	989	515	382	599	850	675
20	837	881	990	---	945	899	970	531	388	611	861	620
21	842	889	1020	1110	958	900	938	600	399	630	821	605
22	841	881	1060	1060	971	896	906	572	399	648	810	608
23	840	886	1050	980	970	893	882	547	360	660	825	610
24	836	895	1050	929	979	900	880	515	348	665	900	611
25	829	880	1040	905	960	915	842	456	329	650	870	640
26	840	857	999	899	926	928	819	379	320	641	829	650
27	850	862	961	893	880	950	772	302	312	661	849	635
28	841	910	940	902	850	951	721	294	331	674	819	640
29	843	939	930	924	841	967	671	302	345	691	800	632
30	839	974	920	948	---	952	646	329	366	692	789	635
31	842	---	918	959	---	931	---	379	---	673	779	---
MEAN	830	856	956	991	940	899	939	485	432	562	783	702

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.0	15.0	15.5	6.0	4.5	5.0	.0	.0	.0	.0	.0	.0
2	15.5	14.5	15.0	4.5	4.0	4.0	.0	.0	.0	.0	.0	.0
3	14.5	13.5	14.0	4.0	3.0	3.5	.0	.0	.0	.0	.0	.0
4	13.5	12.5	13.0	4.0	3.0	3.5	.0	.0	.0	.0	.0	.0
5	13.5	12.5	12.5	3.0	2.5	3.0	.0	.0	.0	.0	.0	.0
6	13.5	12.0	12.5	2.5	1.5	2.0	.0	.0	.0	.0	.0	.0
7	14.0	12.5	13.5	1.5	1.0	1.0	.0	.0	.0	.0	.0	.0
8	13.5	12.0	13.0	.5	.0	.5	.0	.0	.0	.0	.0	.0
9	12.0	11.0	11.5	1.5	.0	.0	.0	.0	.0	.0	.0	.0
10	13.0	11.0	12.0	1.0	.0	.5	.0	.0	.0	.0	.0	.0
11	13.0	12.5	13.0	1.0	.5	.5	.0	.0	.0	.0	.0	.0
12	12.5	11.0	11.5	1.5	.5	1.0	.0	.0	.0	.0	.0	.0
13	11.0	9.5	10.5	2.0	.5	1.0	.0	.0	.0	.0	.0	.0
14	11.5	10.0	11.0	1.5	1.0	1.0	.0	.0	.0	.0	.0	.0
15	12.0	11.0	11.5	2.5	1.5	2.0	.0	.0	.0	.0	.0	.0
16	12.0	11.0	11.5	2.5	2.0	2.5	.0	.0	.0	.0	.0	.0
17	12.5	11.0	12.0	3.0	2.5	2.5	.0	.0	.0	.0	.0	.0
18	12.5	11.5	12.0	3.5	2.5	3.0	.0	.0	.0	.0	.0	.0
19	12.0	11.0	11.5	3.0	2.5	3.0	.0	.0	.0	.0	.0	.0
20	11.5	10.0	10.5	2.5	2.0	2.5	.0	.0	.0	.0	.0	.0
21	10.0	9.0	9.5	2.0	.5	1.0	.0	.0	.0	.0	.0	.0
22	9.5	8.5	9.0	.5	.0	.5	.0	.0	.0	.0	.0	.0
23	9.5	8.0	9.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	9.5	8.5	9.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	9.5	9.0	9.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	9.5	9.0	9.5	.5	.0	.5	.0	.0	.0	.0	.0	.0
27	9.5	8.5	9.0	.5	.0	.0	.0	.0	.0	.0	.0	.0
28	9.5	8.5	9.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	9.0	8.0	8.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	8.5	7.5	8.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	7.5	6.0	6.5	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	16.0	6.0	11.0	6.0	.0	1.5	.0	.0	.0	.0	.0	.0

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	.0	.0	.0	.0	.0	.0	---	---	---	18.5	16.0	17.0
2	.0	.0	.0	.0	.0	.0	5.5	.5	3.0	18.5	16.5	17.5
3	.0	.0	.0	.0	.0	.0	6.5	5.0	6.0	19.0	16.5	18.0
4	.0	.0	.0	.0	.0	.0	8.0	5.5	7.0	19.5	17.5	18.5
5	.0	.0	.0	.0	.0	.0	8.5	7.0	8.0	18.5	17.0	18.0
6	.0	.0	.0	.0	.0	.0	9.0	8.0	8.5	18.0	16.0	17.0
7	.0	.0	.0	.0	.0	.0	9.0	7.0	8.0	16.5	14.5	15.5
8	.0	.0	.0	.0	.0	.0	8.0	6.5	7.0	16.0	14.0	15.0
9	.0	.0	.0	.0	.0	.0	9.0	6.5	7.5	15.0	13.5	14.0
10	.0	.0	.0	.0	.0	.0	8.5	8.0	8.5	15.0	12.5	13.5
11	.0	.0	.0	.0	.0	.0	8.5	7.5	8.0	15.0	12.5	14.0
12	.0	.0	.0	.0	.0	.0	9.0	7.5	8.5	16.0	13.5	14.5
13	.0	.0	.0	.5	.0	.0	10.5	8.0	9.0	15.5	13.5	14.5
14	.0	.0	.0	.5	.0	.0	11.5	9.5	10.5	15.5	13.0	14.5
15	.0	.0	.0	.5	.0	.0	11.5	10.5	11.0	15.0	13.5	14.0
16	.0	.0	.0	.5	.0	.0	13.0	10.5	11.5	14.0	13.5	14.0
17	.0	.0	.0	1.0	.0	.5	13.5	11.5	12.5	16.0	13.5	14.5
18	.0	.0	.0	.5	.0	.5	14.5	12.5	13.5	17.5	15.0	16.5
19	.0	.0	.0	.5	.0	.0	15.5	13.0	14.5	19.0	16.0	17.5
20	.0	.0	.0	.5	.5	.5	17.0	14.0	15.5	20.0	18.0	19.0
21	.0	.0	.0	.5	.5	.5	17.5	15.5	16.5	21.5	19.0	20.5
22	.0	.0	.0	.5	.5	.5	16.5	14.5	15.0	23.0	20.5	22.0
23	.0	.0	.0	1.0	.5	.5	15.0	13.5	14.0	22.5	21.5	22.0
24	.0	.0	.0	.5	.5	.5	15.0	13.0	14.0	22.0	20.5	21.0
25	.0	.0	.0	.5	.5	.5	15.5	13.5	14.5	21.0	19.5	20.5
26	.0	.0	.0	.5	.5	.5	15.5	13.5	14.5	19.0	18.0	18.5
27	.0	.0	.0	.5	.5	.5	16.5	14.0	15.0	18.5	17.0	18.0
28	.0	.0	.0	---	---	---	17.0	14.5	16.0	18.0	17.0	17.5
29	.0	.0	.0	---	---	---	17.0	15.0	16.5	17.5	16.5	17.0
30	---	---	---	---	---	---	17.5	15.5	16.5	16.5	16.0	16.0
31	---	---	---	---	---	---	---	---	---	17.0	15.0	16.0
MONTH	.0	.0	.0	1.0	.0	.0	17.5	.5	11.5	23.0	12.5	17.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.0	16.0	16.5	21.5	19.5	20.5	24.5	23.0	23.5	19.0	17.5	18.0
2	18.0	16.5	17.5	22.0	20.5	21.0	25.5	23.0	24.0	18.5	17.5	18.0
3	18.5	17.0	17.5	22.5	21.0	22.0	24.5	21.0	23.0	18.0	17.5	17.5
4	20.0	18.0	19.0	23.5	21.5	22.5	21.0	17.5	19.0	18.0	16.5	17.0
5	20.5	19.0	19.5	23.5	22.0	23.0	20.0	17.0	18.5	18.5	16.5	17.5
6	19.5	18.0	18.5	25.0	22.5	23.5	21.0	18.0	19.5	19.5	17.5	18.5
7	18.5	17.0	17.5	24.0	22.5	23.5	21.0	20.0	20.5	20.5	18.5	20.0
8	19.5	16.5	18.0	23.0	21.5	22.0	22.0	20.0	21.0	20.5	17.5	19.0
9	20.0	17.5	19.0	23.0	21.0	22.0	21.5	20.5	21.0	18.0	16.5	17.5
10	20.5	18.0	19.5	25.0	21.5	23.0	22.0	20.5	21.5	18.0	16.0	17.5
11	20.5	19.0	19.5	24.5	23.0	23.5	22.5	20.5	21.5	18.0	17.0	17.5
12	22.0	19.0	20.5	23.0	21.5	22.5	22.0	20.5	21.5	17.5	16.5	17.0
13	22.5	20.5	21.5	23.5	21.5	22.5	22.0	20.0	21.0	17.5	16.0	16.5
14	22.0	19.5	21.0	23.5	21.5	22.5	21.5	20.0	21.0	17.0	16.0	16.5
15	21.5	20.5	21.0	23.0	22.0	22.5	20.5	18.5	19.5	---	---	---
16	21.0	19.5	20.0	23.0	21.5	22.5	18.5	16.5	17.5	---	---	---
17	21.0	19.5	20.0	23.0	21.5	22.0	18.5	16.0	17.0	---	---	---
18	20.5	20.0	20.5	22.5	20.0	21.5	20.5	18.0	19.0	---	---	---
19	20.0	19.5	19.5	22.5	21.0	21.5	21.0	20.0	20.5	---	---	---
20	20.5	19.0	19.5	21.5	20.5	21.0	20.5	20.0	20.5	---	---	---
21	21.5	20.0	20.5	22.0	19.5	21.0	20.5	19.0	20.0	---	---	---
22	23.0	21.5	22.0	24.0	21.0	22.5	20.0	19.0	19.5	---	---	---
23	23.0	22.0	22.5	25.0	22.5	23.5	19.5	18.0	18.5	---	---	---
24	22.5	21.5	22.0	24.5	23.0	24.0	21.0	18.5	20.0	---	---	---
25	22.0	21.0	21.5	23.5	21.5	23.0	21.0	19.0	19.5	---	---	---
26	21.5	20.0	20.5	24.5	22.0	23.0	19.5	17.5	18.0	---	---	---
27	20.0	19.0	19.5	24.0	22.0	23.5	17.5	16.0	17.0	---	---	---
28	19.0	17.5	18.0	24.5	22.5	23.5	19.0	17.0	18.5	---	---	---
29	20.5	17.5	19.0	24.5	22.5	23.0	19.5	18.5	19.0	---	---	---
30	21.0	20.0	20.5	23.5	21.5	22.5	19.0	17.5	18.5	---	---	---
31	---	---	---	24.5	22.5	23.5	19.0	18.0	18.5	---	---	---
MONTH	23.0	16.0	19.5	25.0	19.5	22.5	25.5	16.0	20.0	20.5	16.0	17.5

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	5220	45	634	5310	46	660	5600	112	1690
2	5190	48	673	5580	50	753	6700	105	1900
3	5250	46	652	5760	52	809	7300	105	2070
4	5280	44	627	5610	53	803	7800	106	2230
5	5280	42	599	5400	51	744	8400	105	2380
6	5220	37	521	5340	49	706	8900	104	2500
7	5280	36	513	5310	46	660	9600	114	2950
8	5340	38	548	5310	45	645	9000	103	2500
9	5370	38	551	5610	47	712	9800	96	2540
10	5340	37	533	5640	51	777	8500	96	2200
11	5370	35	507	5490	56	830	7500	97	1960
12	5490	34	504	5430	59	865	7000	94	1780
13	5670	36	551	5370	60	870	6800	90	1650
14	5760	40	622	6350	69	1180	6400	84	1450
15	5850	43	679	6730	71	1290	6400	81	1400
16	5850	44	695	6760	72	1310	6000	80	1300
17	5970	45	725	6730	72	1310	5200	80	1120
18	6000	49	794	6630	72	1290	4700	79	1000
19	5970	52	838	6600	70	1250	4100	78	863
20	6280	52	882	6570	69	1220	4800	81	1050
21	6470	50	873	6570	68	1210	5700	79	1220
22	6510	49	861	6400	66	1140	7000	76	1440
23	6410	49	848	6300	66	1120	8500	78	1790
24	6410	49	848	6200	63	1050	8200	83	1840
25	6600	52	927	6000	59	956	8100	83	1820
26	6670	56	1010	5700	51	785	8200	73	1620
27	6700	59	1070	5300	42	601	8200	64	1420
28	6670	60	1080	5000	56	756	8200	56	1240
29	6600	59	1050	4800	138	1790	7800	49	1030
30	6160	49	815	5000	116	1570	7900	43	917
31	5310	40	573	---	---	---	7600	38	780
TOTAL	181490	---	22603	174800	---	29662	225900	---	51650

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	7200	33	642	4500	48	583	11500	118	3660
2	7000	29	548	4500	34	413	10000	164	4430
3	6800	25	459	4800	28	363	9800	193	5110
4	7000	23	435	5600	31	469	10000	198	5350
5	7400	21	420	6200	48	804	10000	184	4970
6	7800	19	400	6800	77	1410	9000	160	3890
7	7600	19	390	7000	110	2080	7400	131	2620
8	6000	19	308	7000	139	2630	7100	98	1880
9	3300	19	169	7000	154	2910	7200	76	1480
10	2800	18	136	6800	144	2640	7500	75	1520
11	2500	17	115	6600	133	2370	8500	89	2040
12	2300	18	112	6400	125	2160	9500	111	2850
13	2400	26	168	6400	120	2070	10400	135	3790
14	3300	36	321	6400	117	2020	11400	140	4310
15	3500	39	369	6400	115	1990	12000	132	4280
16	4500	44	535	6400	114	1970	11600	150	4700
17	5400	51	744	6200	114	1910	11600	192	6010
18	7000	60	1130	6000	82	1330	11200	211	6380
19	7200	70	1360	6000	59	956	10600	219	6270
20	7200	78	1520	6500	58	1020	10000	222	5990
21	6400	79	1370	7000	64	1210	9900	223	5960
22	6000	73	1180	8000	68	1470	9700	224	5870
23	7000	65	1230	9000	73	1770	10000	225	6070
24	7400	59	1180	10000	78	2110	10200	229	6310
25	7600	59	1210	11000	78	2320	9600	239	6190
26	7600	64	1310	13000	75	2630	10100	263	7170
27	7000	74	1400	14000	69	2610	9800	312	8260
28	6400	83	1430	13000	63	2210	9600	399	10300
29	6000	82	1330	12500	81	2730	9300	525	13200
30	5200	75	1050	---	---	---	9100	717	17600
31	4600	64	795	---	---	---	8900	1100	26400
TOTAL	179400	---	23766	221000	---	51158	302700	---	194940

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	8400	1530	30200	11500	386	12000	19500	791	41600
2	8200	982	21700	11500	375	11600	19000	1080	55400
3	8220	449	9970	11600	253	7920	18600	1120	56200
4	8470	356	8140	12100	292	9540	18400	1030	51200
5	8260	298	6650	13500	355	12900	18400	931	46300
6	8220	325	7210	13200	363	12900	18000	763	37100
7	8120	300	6580	12900	339	11800	17400	626	29400
8	7840	261	5520	13400	344	12400	17300	565	26400
9	7840	256	5420	13600	354	13000	16700	523	23600
10	8080	274	5980	14700	368	14600	17300	465	21700
11	8330	305	6860	15900	382	16400	17200	395	18300
12	8260	320	7140	15500	379	15900	16900	406	18500
13	9090	325	7980	17500	588	27800	19200	1950	101000
14	9090	316	7760	18400	739	36700	25600	3440	238000
15	9200	291	7230	16100	642	27900	28200	2730	208000
16	9240	263	6560	13500	592	21600	32000	2420	209000
17	9160	319	7890	12000	473	15300	33100	2290	205000
18	9280	369	9250	10700	289	8350	31400	1140	96600
19	9800	351	9290	10100	231	6300	31400	771	65400
20	10200	345	9500	10200	227	6250	30100	575	46700
21	10400	337	9460	11400	246	7570	29400	665	52800
22	10500	319	9040	12300	307	10200	31000	665	55700
23	10800	319	9300	12900	431	15000	33600	696	63100
24	11600	348	10900	16800	790	35800	34500	801	74600
25	12100	375	12300	25500	1870	129000	35000	773	73000
26	11700	276	8720	30400	1780	146000	32600	568	50000
27	11200	225	6800	33500	1400	127000	29300	526	41600
28	11300	256	7810	32500	1060	93000	26000	841	59000
29	11900	311	9990	29600	833	66600	24800	472	31600
30	12200	377	12400	23800	688	44200	25000	297	20000
31	---	---	---	21000	808	45800	---	---	---
TOTAL	287000	---	283550	517600	---	1021330	746900	---	2116000

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	23600	301	19200	7460	75	1510	6600	394	7020
2	20800	493	27700	6700	63	1140	6630	320	5730
3	19000	313	16100	6320	58	990	6700	259	4690
4	19000	247	12700	5970	60	967	7230	206	4020
5	18900	273	13900	5940	61	978	6860	122	2260
6	18700	243	12300	5940	60	962	6760	93	1700
7	19400	246	12900	5880	58	921	6670	78	1400
8	18800	202	10300	5790	54	844	6540	68	1200
9	16800	134	6080	5670	54	827	6380	60	1030
10	16000	139	6000	5430	61	894	5790	56	875
11	15400	134	5570	5080	73	1000	5460	56	826
12	15100	123	5010	5130	88	1220	5730	60	928
13	15300	126	5210	5080	100	1370	6000	66	1070
14	15000	153	6200	5080	105	1440	6320	77	1310
15	14500	156	6110	5130	114	1580	6600	98	1750
16	13700	147	5440	9390	6730	222000	8050	142	3090
17	13100	150	5310	11500	12700	394000	9650	225	5860
18	12600	276	9390	7600	6670	137000	10000	332	8960
19	12200	179	5900	7260	2060	40400	10000	282	7610
20	12000	124	4020	8050	604	13100	9690	188	4920
21	11800	111	3540	7870	503	10700	9730	118	3100
22	11100	118	3540	8050	527	11500	9730	120	3150
23	10700	107	3090	8010	501	12600	10500	171	4850
24	10200	85	2340	7910	648	13800	11100	213	6380
25	9460	81	2070	7460	717	14400	11000	218	6470
26	9160	83	2050	7160	729	14100	11100	205	6140
27	8940	86	2080	7030	694	13200	11200	191	5780
28	8620	89	2070	6830	642	11800	11100	179	5360
29	8370	89	2010	6470	581	10100	11000	162	4810
30	8370	83	1880	6630	587	10500	10800	150	4370
31	7870	70	1490	6630	527	9430	---	---	---
TOTAL	434490	---	221500	210450	---	955273	250920	---	116659
YEAR	3732650		5088091						

06329590 YELLOWSTONE RIVER STAGE GAGE NO. 1 NEAR FAIRVIEW, MT

LOCATION.--Lat 47°48'34", long 104°02'36", sec. 18, T.150 N., R.104 W., McKenzie County, Hydrologic Unit 10100004, on left bank 3 mi (4.8 km) south of Fairview, and at mile 15.2 (24.5 km).

DRAINAGE AREA.--70,000 mi^2 (181,000 km^2), approximately.

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft (566.928 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 19, 1962 at datum 60.00 ft (18.288 m) lower.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 23.78 ft (7.248 m) Mar. 21, 1960, present datum; minimum daily recorded, 9.10 ft (2.774 m) May 16-17, Aug. 12-13, 1961, present datum.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.66						---	14.01	16.11	17.05	---	---
2	10.63						---	13.81	15.95	16.39	---	---
3	10.64						13.09	13.73	15.80	16.00	---	---
4	10.65						13.04	13.78	15.70	15.90	---	---
5	10.63						12.98	14.14	15.65	15.92	---	12.12
6	10.67						12.94	---	15.60	15.82	---	12.20
7	10.71						12.93	---	15.45	15.88	---	12.23
8	10.72						12.87	---	15.35	16.03	---	12.23
9	10.72						12.86	---	15.31	15.50	---	12.16
10	10.69						12.87	---	15.29	15.22	---	11.85
11	10.70						12.92	---	15.25	15.00	---	11.69
12	10.71						12.99	---	15.23	14.82	---	11.77
13	10.72						13.17	---	15.87	14.81	11.35	11.89
14	10.73						13.17	---	17.24	14.78	11.38	12.01
15	10.74						13.21	15.28	17.76	14.65	11.40	12.10
16	10.75						13.23	14.60	18.50	14.38	12.36	12.46
17	10.78						13.24	14.04	18.70	14.16	13.91	13.14
18	10.83						13.18	13.65	18.32	14.00	12.68	13.37
19	10.80						13.30	13.40	18.35	13.98	12.28	13.42
20	10.79						13.41	13.31	18.07	13.97	12.50	13.31
21	10.90						13.48	13.52	17.91	13.89	12.45	13.32
22	10.91						13.54	13.83	18.20	13.70	12.46	13.27
23	10.90						13.59	13.97	18.61	13.41	---	13.42
24	10.88						13.76	14.65	18.75	13.17	---	13.70
25	10.97						14.05	16.74	18.90	---	---	13.74
26	10.97						13.98	17.95	18.58	---	---	13.69
27	11.02						13.77	18.45	18.03	---	---	13.72
28	11.03						13.74	18.46	17.40	---	---	13.64
29	11.02						13.78	18.20	17.18	---	---	13.58
30	10.95						13.99	17.20	17.08	---	---	13.52
31	10.64						---	16.59	---	---	---	---
TOTAL	334.46						---	---	510.14	---	---	---
MEAN	10.79						---	---	17.00	---	---	---
MAX	11.03						---	---	18.90	---	---	---
MIN	10.63						---	---	15.23	---	---	---

06329597 CHARBONNEAU CREEK NEAR CHARBONNEAU, ND

LOCATION.--Lat 47°51'10", long 103°47'40", in SW¼ sec.31, T.151 N., R.102 W., McKenzie County, Hydrologic Unit 10100004, Little Missouri National Grassland on right bank, 45 ft (14 m) downstream from county highway bridge, and 1.5 mi (2.4 km) west of Charbonneau.

DRAINAGE AREA.--149 mi² (386 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records good except those for the winter period, which are fair.

AVERAGE DISCHARGE.--14 years, 15.4 ft³/s (0.436 m³/s), 11,160 acre-ft/yr (13.8 hm³/yr); median of yearly mean discharges, 14 ft³/s (0.40 m³/s), 10,100 acre-ft/yr (12 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,300 ft³/s (178 m³/s) Apr. 17, 1979, gage height, 8.32 ft (2.536 m); maximum gage height, 11.02 ft (3.359 m) Mar. 17, 1976, backwater from ice; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20 ft³/s (0.57 m³/s) Mar. 16, gage height, 4.65 ft (1.417 m), backwater from ice, no peak above base of 100 ft³/s (2.83 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.50	.55	.25	.50	.60	3.0	.21	.02	.01	.00	.12
2	.09	.50	.55	.20	.50	.60	2.6	.24	.02	.01	.00	.15
3	.09	.50	.55	.15	.55	.55	2.5	.24	.02	.02	.00	.12
4	.11	.50	.65	.10	.60	.50	2.2	.24	.02	.01	.00	.12
5	.12	.50	.70	.10	.65	.45	2.1	.24	.03	.00	.00	.12
6	.11	.54	.70	.02	.65	.40	2.3	.30	.02	.00	.00	.06
7	.12	.59	.70	.00	.60	.40	2.1	.30	.02	.00	.00	.15
8	.12	.56	.65	.00	.60	.45	2.2	.30	.02	.00	.00	.24
9	.14	.50	.60	.00	.60	.50	2.4	.24	.02	.00	.00	.42
10	.17	.50	.60	.00	.60	.55	1.6	.24	.02	.00	.00	.42
11	.19	.50	.55	.00	.60	.60	1.5	.24	.02	.00	.00	.36
12	.19	.50	.55	.00	.55	.60	1.2	.24	.59	.00	.00	.42
13	.24	.50	.50	.10	.55	.60	1.1	.19	2.1	.00	.00	.36
14	.38	.55	.50	.30	.55	1.0	.87	.19	1.6	.02	.00	.30
15	.42	.70	.45	.60	.50	5.0	.89	.15	1.0	.05	.00	.24
16	.42	.80	.40	.70	.50	10	.84	.12	.89	.03	1.0	.19
17	.42	.80	.40	.70	.50	15	.68	.15	.89	.01	1.2	.15
18	.42	.80	.42	.65	.50	10	.61	.19	.59	.01	1.3	.15
19	.42	.75	.50	.60	.50	11	.58	.19	.59	.02	1.1	.24
20	.47	.75	.50	.60	.50	8.0	.44	.19	.50	.02	.89	.15
21	.42	.70	.45	.60	.50	5.8	.37	.19	.42	.02	.57	.36
22	.42	.70	.45	.60	.50	4.9	.24	.15	.30	.03	.44	.12
23	.42	.70	.45	.65	.50	3.8	.28	.05	.24	.01	.30	.12
24	.42	.65	.40	.70	.50	4.1	.28	.03	.09	.00	.29	.15
25	.50	.65	.40	.65	.50	4.1	.24	.02	.04	.00	.15	.12
26	.59	.65	.40	.60	.55	3.8	.24	.01	.02	.00	.15	.09
27	.57	.60	.40	.55	.70	3.4	.24	.00	.01	.00	.12	.09
28	.50	.60	.35	.50	.70	3.4	.24	.00	.02	.00	.10	.09
29	.50	.53	.35	.50	.65	3.1	.24	.00	.02	.00	.14	.05
30	.50	.57	.35	.50	---	3.1	.20	.00	.00	.00	.15	.04
31	.50	---	.30	.50	---	3.1	---	.01	---	.00	.15	---
TOTAL	10.07	18.19	15.32	11.42	16.20	109.40	34.28	4.86	10.14	.27	8.05	5.71
MEAN	.32	.61	.49	.37	.56	3.53	1.14	.16	.34	.009	.26	.19
MAX	.59	.80	.70	.70	.70	15	3.0	.30	2.1	.05	1.3	.42
MIN	.09	.50	.30	.00	.50	.40	.20	.00	.00	.00	.00	.04
AC-FT	20	36	30	23	32	217	68	9.6	20	.5	16	11

CAL YR 1979 TOTAL 11740.57 MEAN 32.2 MAX 4170 MIN .07 AC-FT 23290
WTR YR 1980 TOTAL 243.91 MEAN .67 MAX 15 MIN .00 AC-FT 484

06329597 CHARBONNEAU CREEK NEAR CHARBONNEAU, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
05...	0840	.12	2420	--	10.0	--	--	--	--
NOV									
07...	1205	.59	3050	8.5	2.5	230	0	32	36
30...	1340	.57	3250	8.4	1.0	200	0	27	32
FEB									
14...	1215	.55	3600	8.4	.0	260	0	36	41
MAR									
19...	1610	13	1010	E7.5	.5	88	0	14	13
APR									
01...	1530	3.0	1300	--	2.0	--	--	--	--
07...	1450	2.1	1320	8.3	3.0	88	0	17	11
MAY									
05...	1530	.26	2300	8.2	21.0	170	0	30	23
JUN									
06...	0810	.02	1750	8.4	15.5	210	0	33	31
JUL									
10...	0910	<.01	2920	E8.3	22.0	210	0	31	32
AUG									
29...	1045	.16	3650	8.4	18.0	190	0	19	35

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
NOV									
07...	730	87	21	7.0	1080	18	916	5.6	900
30...	830	90	26	8.4	1190	0	976	7.6	980
FEB									
14...	970	89	26	8.0	1570	0	1290	10	1100
MAR									
19...	180	80	8.3	9.6	311	0	255	--	230
APR									
01...	--	--	--	--	--	--	--	--	--
07...	280	87	13	5.6	406	0	333	3.3	370
MAY									
05...	480	85	16	7.3	686	15	588	7.2	630
JUN									
06...	620	86	19	8.4	892	16	758	5.9	790
JUL									
10...	690	87	21	9.2	965	14	815	2.0	830
AUG									
29...	870	90	27	10	1140	50	1020	7.9	1000

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
NOV									
07...	7.5	.7	8.8	2270	3.17	3.71	230	200	80
30...	6.6	.8	9.5	2480	3.26	3.69	260	140	70
FEB									
14...	6.7	.9	16	2950	4.09	4.47	320	130	120
MAR									
19...	.7	.2	6.5	609	.91	23.6	100	280	60
APR									
01...	--	--	--	--	--	--	--	--	--
07...	7.1	.3	4.4	897	1.27	5.30	320	50	50
MAY									
05...	7.5	.6	5.6	1540	2.19	1.13	200	60	60
JUN									
06...	7.5	.9	9.3	1960	2.58	.10	0	90	70
JUL									
10...	11	1.1	10	2110	2.86	.00	70	20	50
AUG									
29...	15	.7	4.8	2570	3.48	1.11	210	110	0

E - Estimated.

06329610 YELLOWSTONE RIVER STAGE GAGE NO. 2 NEAR CARTWRIGHT, ND

LOCATION.--Lat 47°51'50", long 103°58'06", on south line sec.26, T.151 N., R.104 W., McKenzie County, Hydrologic Unit 10100004, on bridge on State Highway 23, 2 mi (3.2 km) west of Cartwright, and at mile 8.6 (13.8 km).

DRAINAGE AREA.--70,000 mi² (181,000 km²), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,800.00 ft (548.640 m) National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 87.08 ft (26.542 m) Mar. 23, 1978; minimum daily recorded, 58.58 ft (17.855 m) July 26, 1974.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64.99						---	67.80	69.59	---	65.89	65.66
2	64.93						---	67.62	69.27	---	65.68	65.73
3	64.98						---	67.57	69.15	---	65.50	65.63
4	64.96						---	67.58	69.10	---	65.38	65.78
5	64.98						---	---	69.05	---	65.35	65.70
6	64.98						---	---	69.00	---	65.36	65.64
7	65.00						---	---	68.80	---	65.33	65.58
8	65.03						---	---	68.70	---	65.30	65.56
9	65.05						---	---	68.70	---	65.25	65.50
10	65.02						66.11	---	68.70	---	65.20	65.33
11	65.03						66.21	---	68.75	---	65.07	65.20
12	65.03						66.30	---	68.59	---	65.05	65.28
13	65.10						66.48	---	69.14	---	65.05	65.35
14	65.08						66.67	---	70.53	---	65.03	65.47
15	65.19						66.78	68.58	---	---	65.07	65.57
16	65.20						66.85	67.95	---	---	65.75	65.82
17	65.21						---	67.58	---	67.37	67.48	66.50
18	65.27						---	67.18	---	67.22	66.45	66.80
19	65.24						---	66.93	---	67.12	65.98	66.68
20	65.30						---	66.86	---	67.18	66.18	66.80
21	65.41						---	67.01	---	67.05	66.11	66.77
22	65.42						---	67.37	---	66.90	66.10	66.95
23	65.41						---	67.50	---	66.79	66.12	67.09
24	65.40						---	68.03	---	66.71	66.13	67.09
25	65.42						---	69.92	---	66.56	66.03	66.96
26	65.50						---	71.02	---	66.46	65.95	66.97
27	65.50						---	71.55	---	66.33	65.90	66.85
28	65.50						67.50	71.67	---	66.28	65.82	66.72
29	65.48						67.53	71.36	---	66.17	65.74	66.73
30	65.40						67.75	70.40	---	66.15	65.67	66.70
31	65.00						---	69.85	---	66.06	65.74	---
TOTAL	2021.01						---	---	---	---	2036.66	1984.41
MEAN	65.19						---	---	---	---	65.70	66.15
MAX	65.50						---	---	---	---	67.48	67.09
MIN	64.93						---	---	---	---	65.03	65.20

06329620 YELLOWSTONE RIVER STAGE GAGE NO. 3 NEAR BUFORD, ND

LOCATION.--Lat 47°56'16", long 103°57'52", in SW¼ sec.35, T.152 N., R.104 W., McKenzie County, Hydrologic Unit 10100004, on left bank 4 mi (6.4 km) south of Buford, and at mile 3.3 (5.3 km).

DRAINAGE AREA.--70,000 mi² (181,000 km²), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,850.00 ft (563.880 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 19, 1962, at datum 50.00 ft (15.240 m) lower.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 29.55 ft (9.007 m) Mar. 15, 1972; minimum daily recorded, 6.18 ft (1.884 m) Aug. 24, 1961, present datum.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.08						---	---	14.12	15.15	---	11.02
2	10.00						---	---	13.90	14.65	---	11.05
3	10.09						16.05	---	13.76	14.25	---	11.00
4	10.07						13.50	---	13.70	14.07	---	11.13
5	---						11.78	---	13.65	14.13	---	11.13
6	---						11.50	---	13.64	14.04	---	11.08
7	---						11.39	---	13.57	14.10	---	11.02
8	---						11.30	---	13.46	14.17	---	10.93
9	---						---	---	13.45	13.80	---	10.89
10	---						---	---	13.43	13.50	---	10.73
11	---						---	---	13.41	13.37	---	10.58
12	---						---	---	13.43	13.21	---	10.69
13	---						---	---	13.73	13.21	10.49	10.73
14	---						---	---	15.27	13.21	10.48	10.83
15	---						---	13.72	15.52	13.11	10.46	10.95
16	10.29						---	13.07	16.27	12.90	10.98	11.18
17	10.34						---	12.39	16.60	12.70	12.71	11.77
18	10.40						---	11.90	16.25	12.57	11.81	12.09
19	10.40						---	11.61	16.18	12.48	11.25	12.14
20	10.50						---	11.50	16.00	12.40	11.36	12.04
21	10.68						---	11.67	15.79	12.33	11.36	12.02
22	10.65						---	12.02	15.98	12.21	11.34	11.97
23	10.60						---	12.19	16.40	12.08	11.37	12.07
24	10.59						---	12.55	16.60	11.98	11.37	12.30
25	10.68						---	14.28	16.71	11.81	11.28	12.38
26	10.60						---	15.48	16.50	11.70	11.20	12.33
27	10.60						---	16.05	16.12	11.61	11.18	12.34
28	10.56						---	16.09	15.66	11.58	11.12	12.28
29	10.49						---	15.95	15.25	11.48	11.06	12.21
30	10.47						---	15.20	15.22	11.43	10.99	12.19
31	10.01						---	14.59	---	11.35	11.08	---
TOTAL	---						---	---	449.57	400.58	---	345.07
MEAN	---						---	---	14.99	12.92	---	11.50
MAX	---						---	---	16.71	15.15	---	12.38
MIN	---						---	---	13.41	11.35	---	10.58

06329640 MISSOURI RIVER STAGE GAGE NO. 5A AT BUFORD, ND

LOCATION.--Lat 47°59'06", long 103°59'05", in SE¼ sec.15, T.152 N., R.104 W., Williams County, Hydrologic Unit 10110101, on left bank 1.5 mi (2.4 km) southwest of Buford, and at mile 1,580.7 (2,543.3 km).

DRAINAGE AREA.--164,000 mi² (425,000 km²), approximately.

PERIOD OF RECORD.--April 1960 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,850.00 ft (563.880 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 8, 1962 at datum 50.00 ft (15.240 m) lower.

REMARKS.--Stage regulated by upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 19.37 ft (5.904 m) Mar. 23, 1978; minimum daily recorded, 2.63 ft (0.802 m) Aug. 15-16, 1966.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	6.72					---	8.20	10.80	12.69	8.71	8.89
2	---	6.78					---	7.95	10.57	12.20	8.62	8.90
3	---	6.83					---	7.80	10.44	11.82	8.40	8.85
4	---	6.86					---	7.84	10.30	11.60	8.40	8.95
5	---	6.80					---	8.08	10.30	11.66	8.43	9.01
6	---	6.79					---	8.37	10.39	11.47	8.39	8.94
7	---	6.77					---	8.38	10.38	11.37	8.28	8.83
8	---	6.76					7.88	8.47	10.32	11.44	8.24	8.55
9	---	6.86					7.86	8.65	10.38	11.20	8.30	8.59
10	---	6.88					7.92	---	10.40	10.97	8.35	8.30
11	---	6.90					7.82	---	10.40	10.94	8.30	8.15
12	---	6.87					7.73	---	10.39	10.67	8.24	8.45
13	---	6.82					7.80	---	10.60	10.55	8.18	8.35
14	---	6.83					7.82	---	12.04	10.73	8.02	8.41
15	---	7.09					7.78	---	12.37	10.65	8.01	8.58
16	---	---					7.91	9.35	13.18	10.44	8.51	8.74
17	---	---					7.91	8.77	13.67	10.20	10.11	9.17
18	6.80	---					7.82	8.28	13.35	10.12	9.51	9.61
19	6.90	---					7.95	7.91	13.26	10.02	9.02	9.68
20	6.90	---					7.94	7.80	13.12	9.94	9.06	9.62
21	7.00	---					8.05	7.88	12.80	9.84	9.11	9.65
22	7.13	---					8.01	8.22	12.95	9.77	9.12	9.59
23	7.09	---					7.98	8.50	13.40	9.65	9.14	9.65
24	7.05	---					8.05	8.78	13.67	9.69	9.10	9.87
25	7.25	---					8.32	10.44	13.87	9.32	9.00	9.99
26	7.30	---					8.33	11.80	13.79	9.22	8.93	9.98
27	7.27	---					8.12	12.51	13.58	9.21	8.94	10.00
28	7.11	---					8.02	12.60	13.28	9.13	8.84	9.89
29	7.02	---					7.97	12.57	12.86	9.00	8.77	9.84
30	6.93	---					8.07	11.87	12.84	9.00	8.72	9.86
31	6.77	---					---	11.18	---	8.87	8.86	---
TOTAL	---	---					---	---	359.70	323.38	269.61	274.89
MEAN	---	---					---	---	11.99	10.43	8.70	9.16
MAX	---	---					---	---	13.87	12.69	10.11	10.00
MIN	---	---					---	---	10.30	8.87	8.01	8.15

06329650 MISSOURI RIVER STAGE GAGE NO. 6 NEAR BUFORD, ND

LOCATION.--Lat 47°57'18", long 103°54'36", in SE¼ sec.30, T.152 N., R.103 W., Williams County, Hydrologic Unit 10110101, on right bank 5 mi (8 km) southeast of Buford, and at mile 1,576.0 (2,535.8 km).

DRAINAGE AREA.--164,000 mi² (425,000 km²), approximately.

PERIOD OF RECORD.--1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft (560.832 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 17, 1962, at datum 40.00 ft (12.192 m) lower.

REMARKS.--Stage regulated by upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 24.15 ft (7.361 m) June 29, 1975; minimum daily recorded, 8.23 ft (2.509 m) Aug. 15 and 22, 1963.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.61	---						---	17.44	---	15.67	15.67
2	13.51	---						---	17.16	---	---	15.67
3	---	---						---	17.02	---	---	15.65
4	---	---						---	16.95	---	---	15.72
5	---	---						---	16.85	---	---	15.78
6	---	---						---	16.90	---	---	15.74
7	---	---						---	16.93	---	---	15.64
8	---	---						---	16.83	---	---	15.37
9	---	---						---	16.88	18.17	---	15.37
10	---	---						---	16.90	17.95	---	15.12
11	---	---						---	16.92	17.93	---	14.94
12	---	---						---	16.97	17.64	---	15.23
13	---	---						---	17.13	17.52	---	15.14
14	13.44	---						---	17.83	17.70	14.92	15.15
15	13.43	---						16.43	19.10	17.63	14.94	15.32
16	13.24	13.72						---	19.97	17.45	15.39	15.42
17	---	---						---	---	17.19	17.04	15.83
18	---	---						---	---	17.08	16.57	16.20
19	---	---						---	---	16.99	15.92	16.34
20	---	---						---	---	16.92	15.91	16.31
21	---	---						---	---	16.80	15.94	16.32
22	---	---						---	---	16.72	15.97	16.20
23	---	---						---	---	16.58	15.97	16.30
24	---	---						---	---	16.62	15.93	16.50
25	---	---						17.31	---	16.29	15.86	16.62
26	---	---						18.54	---	16.13	15.75	16.63
27	---	---						19.34	---	16.12	15.74	16.65
28	---	---						19.52	---	16.10	15.65	16.57
29	---	---						19.50	---	15.99	15.60	16.53
30	---	---						18.77	---	15.94	15.53	16.57
31	---	---						17.93	---	15.87	15.65	---
TOTAL	---	---						---	---	---	---	476.66
MEAN	---	---						---	---	---	---	15.89
MAX	---	---						---	---	---	---	16.65
MIN	---	---						---	---	---	---	14.94

06329660 MISSOURI RIVER STAGE GAGE NO. 7 NEAR TRENTON, ND

LOCATION.--Lat 47°59'21", long 103°47'57", in NE¼ sec.13, T.152 N., R.103 W., McKenzie County, Hydrologic Unit 10110101, on right bank 5 mi (8 km) south of Trenton, and at mile 1,566.7 (2,520.8 km).

DRAINAGE AREA.--164,000 mi² (425,000 km²), approximately.

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft (560.832 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 7, 1962, at site 0.8 mi (1.3 km) upstream. Prior to May 29, 1963, at datum 40.00 ft (12.192 m) lower.

REMARKS.--Stage regulated by upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 21.56 ft (6.572 m) July 10, 1975; minimum daily recorded, 4.34 ft (1.323 m) Aug. 19, 22, 1963.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]					---	[illegible]	---	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]					---	[illegible]	---	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]					---	[illegible]	---	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]					---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]					---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]					---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]					---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]					---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]					---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]					---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
18	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
19	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
20	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
21	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
22	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
23	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
24	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
25	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
26	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
27	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
28	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
29	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
30	[illegible]	---					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
31	[illegible]	---					---	[illegible]	---	[illegible]	[illegible]	---
TOTAL	[illegible]	---					---	[illegible]	---	[illegible]	[illegible]	---
MEAN	[illegible]	---					---	[illegible]	---	[illegible]	[illegible]	---
MAX	[illegible]	---					---	[illegible]	---	[illegible]	[illegible]	---
MIN	[illegible]	---					---	[illegible]	---	[illegible]	[illegible]	---

06329680 MISSOURI RIVER STAGE GAGE NO. 6 NEAR TRENTON, ND

LOCATION.--Lat 48°03'10", long 103°43'54", in NE¼ sec.30, T.153 N., R.101 W., McKenzie County, Hydrologic Unit 10110101, on right bank 5.5 mi (8.8 km) southeast of Trenton, and at mile 1,557.2 (2,505.5 km).

DRAINAGE AREA.--164,000 mi² (425,000 km²), approximately.

PERIOD OF RECORD.--March 1959 to November 1979 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,830.00 ft (557.784 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 4, 1962 at datum 30.00 ft (9.144 m) lower.

REMARKS.--Stage regulated by upstream reservoirs and backwater from Lake Sakakawea.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 28.50 ft (8.687 m) Mar. 25, 1978; minimum daily recorded, 4.96 ft (1.512 m) Aug. 30, 1961, present datum.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]										
2	[illegible]	[illegible]										
3	[illegible]	[illegible]										
4	[illegible]	[illegible]										
5	[illegible]	[illegible]										
6	[illegible]	[illegible]										
7	[illegible]	[illegible]										
8	[illegible]	[illegible]										
9	[illegible]	[illegible]										
10	[illegible]	[illegible]										
11	[illegible]	[illegible]										
12	[illegible]	[illegible]										
13	[illegible]	[illegible]										
14	[illegible]	[illegible]										
15	[illegible]	[illegible]										
16	[illegible]	[illegible]										
17	[illegible]	----										
18	[illegible]	----										
19	[illegible]	----										
20	[illegible]	----										
21	[illegible]	----										
22	[illegible]	----										
23	[illegible]	----										
24	[illegible]	----										
25	[illegible]	----										
26	[illegible]	----										
27	[illegible]	----										
28	[illegible]	----										
29	[illegible]	----										
30	[illegible]	----										
31	[illegible]	----										
TOTAL	[illegible]	----										
MEAN	[illegible]	----										
MAX	[illegible]	----										
MIN	[illegible]	----										

06330000 MISSOURI RIVER NEAR WILLISTON, ND

LOCATION.--Lat 48°06'45", long 103°43'04", in NE¼ sec.31, T.154 N., R.101 W., McKenzie County, Hydrologic Unit 10110101, at city waterplant on left bank, 5 mi (8 km) southeast of Williston, 29.3 mi (47.1 km) downstream from Yellowstone River, and at mile 1,552.7 (2,498.5 km).

DRAINAGE AREA.--164,500 mi² (426,000 km²), approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--April 1966 to current year. Operated as a stage-discharge station October 1927 to July 1965.

GAGE.--Water-stage recorder. Datum of gage is 1,830.20 ft (557.845 m) National Geodetic Vertical Datum of 1929. See WSP 1917 for history of changes prior to April 1966.

REMARKS.--Stage regulated by upstream reservoirs and backwater from Lake Sakakawea.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 26.46 ft (8.065 m) Mar. 28, 1978; minimum daily recorded, 7.80 ft (2.377 m) Nov. 2, 1966.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	---	[illegible]
6	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	---	[illegible]
7	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	---	[illegible]
8	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	---			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	---	[illegible]			---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	---	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	---	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	---	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	---	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	---	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	---	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	---	---			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	---	---			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	---	---			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	---	---			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	---	---			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	---	---			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	---	---			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	---	---			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	---	---			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	---	---	---			---	[illegible]	---	[illegible]	[illegible]	---
TOTAL	[illegible]	[illegible]	---	---			---	[illegible]	[illegible]	[illegible]	---	[illegible]
MEAN	[illegible]	[illegible]	---	---			---	[illegible]	[illegible]	[illegible]	---	[illegible]
MAX	[illegible]	[illegible]	---	---			---	[illegible]	[illegible]	[illegible]	---	[illegible]
MIN	[illegible]	[illegible]	---	---			---	[illegible]	[illegible]	[illegible]	---	[illegible]

06330000 MISSOURI RIVER NEAR WILLISTON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-65, 1969-70, 1974 to current year.

REMARKS.--Discharge data computed by adding the discharges of station 06329500 Yellowstone River near Sidney, Mont. to that of station 06185500 Missouri River near Culbertson, Mont.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
OCT										
09...	0915	E14500	800	8.5	5.0	9.0	10.0	106	14	K10
NOV										
14...	0900	E13100	800	8.3	-8.0	1.0	13.0	102	--	K20
DEC										
11...	0900	E15700	760	8.3	-10.5	.5	12.8	100	--	K30
JAN										
15...	0930	E15100	880	8.4	-2.5	.5	12.0	98	--	K20
FEB										
12...	0930	E20000	800	8.3	-12.0	.5	12.8	95	--	K10
APR										
08...	0930	E16500	900	8.2	-2.5	6.5	11.5	97	16	K20
MAY										
14...	0900	E24800	570	8.4	13.0	14.0	9.8	101	30	K22
JUN										
11...	1000	E25600	617	8.4	25.0	20.0	8.2	78	24	--
JUL										
17...	1000	E28700	645	8.8	26.0	22.0	8.4	--	19	87
AUG										
13...	0900	E18600	782	8.3	15.5	16.5	8.9	101	17	K55
SEP										
11...	1000	E18900	792	8.1	23.0	17.0	9.2	101	12	K22

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

E Estimated.

K Results based on colony count outside the acceptable range (non-ideal colony count).

06330000 MISSOURI RIVER NEAR WILLISTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, TOTAL (MG/L AS F) (00951)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)
OCT 09...	260	9.0	--	.6	7.1	542	560	.74	21200	.05
NOV 14...	240	10	--	.6	7.3	557	524	.76	19700	--
DEC 11...	250	14	--	.6	9.1	564	576	.77	23900	--
JAN 15...	290	11	--	.7	8.8	640	631	.87	26100	--
FEB 12...	290	16	--	.5	8.4	626	613	.85	30500	--
APR 08...	260	13	.7	--	6.7	607	569	.83	27000	.13
MAY 14...	140	7.4	.5	.6	9.6	366	336	.47	23200	.17
JUN 11...	150	9.2	.1	.2	9.7	441	396	.60	30200	.12
JUL 15...	190	8.9	.5	.7	7.6	462	433	.63	34300	.08
AUG 12...	220	11	.6	.6	7.5	505	496	.69	25600	.08
SEP 10...	231	10	7.5	.7	7.8	499	493	.68	25500	.08

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)
OCT 09...	.02	.07	.02	.03	.49	.51	.58	2.6	.030	500
NOV 14...	--	.15	.05	.06	.44	.49	.64	2.7	.030	500
DEC 11...	--	.58	.01	.01	.73	.84	.86	3.8	.010	--
JAN 15...	--	.25	.02	.02	.65	.87	.92	4.1	.020	--
FEB 12...	--	.80	.03	.04	.40	.43	.81	3.6	.040	--
APR 08...	.01	.14	.04	.05	.40	.44	.84	3.7	.120	2100
MAY 14...	.01	.18	.01	.01	1.4	1.4	1.6	7.0	.190	1100
JUN 11...	.01	.15	.03	.04	2.7	2.7	2.8	13	.800	8800
JUL 15...	.00	.08	.00	.00	.40	.40	.40	2.1	.110	400
AUG 12...	.00	.08	.00	.00	1.2	1.2	1.3	5.6	.090	710
SEP 10...	.01	.08	.08	.00	[illegible]	[illegible]	[illegible]	3.4	.080	560

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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06330000 MISSOURI RIVER NEAR WILLISTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	BORON, SUS-PENDED RECOV-ERABLE (UG/L AS B) (01021)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 09...	150	10	140	1	--	--	10	--	--	0	2
NOV 14...	--	--	150	0	0	<1	0	0	0	--	5
DEC 11...	--	--	170	--	--	--	--	--	--	--	--
JAN 15...	--	--	130	--	--	--	--	--	--	--	--
FEB 12...	--	--	140	--	--	--	--	--	--	--	--
APR 08...	240	0	240	1	--	--	0	--	--	6	8
MAY 14...	120	0	120	0	0	0	0	0	0	2	8
JUN 11...	140	10	130	1	--	--	0	--	--	3	36
JUL 15...	130	6	120	1	--	--	0	--	--	1	13
AUG 12...	410	260	150	1	--	--	10	--	--	2	6
SEP 10...	150	40	110	1	--	--	10	--	--	2	7

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

06330000 MISSOURI RIVER NEAR WILLISTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT										
09...	--	--	1	--	--	0	--	10	--	--
NOV										
14...	1	6	1	0	1	--	.0	51	0	50
APR										
08...	--	--	1	--	--	0	--	31	--	--
MAY										
14...	6	6	1	0	1	0	.0	50	10	20
JUN										
11...	--	--	1	--	--	3	--	215	--	--
JUL										
15...	--	--	1	--	--	0	--	31	--	--
AUG										
12...	--	--	1	--	--	0	--	30	--	--
SEP										
10...	--	--	1	--	--	0	--	33	--	--

DATE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)
OCT										
09...	--	--	--	--	--	--	--	--	7.6	1.0
NOV										
14...	18	1.8	7.6	1.5	7.1	1.8	.30	4.6	7.8	.8
DEC										
11...	--	--	--	--	--	--	--	--	[illegible]	[illegible]
JAN										
15...	--	--	--	--	--	--	--	--	[illegible]	[illegible]
FEB										
12...	--	--	--	--	--	--	--	--	[illegible]	[illegible]
APR										
08...	--	--	--	--	--	--	--	--	[illegible]	[illegible]
MAY										
14...	--	--	--	--	--	--	--	--	19	1.0
JUN										
11...	--	--	--	--	--	--	--	--	[illegible]	--
JUL										
15...	--	--	--	--	--	--	--	--	[illegible]	[illegible]
AUG										
12...	--	--	--	--	--	--	--	--	[illegible]	[illegible]
SEP										
10...	--	--	--	--	--	--	--	--	[illegible]	[illegible]

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCT						
09...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NOV						
14...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DEC						
11...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN						
15...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FEB						
12...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR						
08...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY						
14...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUN						
11...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL						
15...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG						
12...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP						
10...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

06330110 MISSOURI RIVER STAGE GAGE NO. 9 AT WILLISTON, ND

LOCATION.--Lat 48°08'13", long 103°36'16", in NE¼NE¼ sec.25, T.154 N., R.101 W., Williams County, Hydrologic Unit 10110101, on left bank levee at southeast edge of Williston 0.5 mi (0.8 km) upstream from Little Muddy Creek, and at mile 1,546.2 (2,487.8 km).

DRAINAGE AREA.--164,500 mi² (426,000 km²), approximately.

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,820.00 ft (554.736 m) National Geodetic Vertical Datum of 1929. Prior to May 13, 1969, at site 900 ft (270 m) downstream. At datum 20.00 ft (6.096 m) lower prior to Apr. 7, 1962.

REMARKS.--Stage regulated by upstream reservoirs and backwater from Lake Sakakawea.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 34.22 ft (10.430 m) July 25, 28, 1975; minimum daily recorded, 5.44 ft (1.658 m) Aug. 20, 1961, present datum.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.55	23.53	24.36	25.21	25.05	26.19	25.94	23.21	24.25	24.78	23.10	23.08
2	24.21	23.70	24.42	25.05	25.45	26.18	25.88	23.20	24.18	---	23.06	23.12
3	23.91	23.79	24.52	24.91	25.48	26.05	25.78	23.12	24.37	---	22.99	23.04
4	24.38	23.76	24.77	24.90	25.51	26.03	25.51	23.02	24.05	---	22.64	23.02
5	23.81	23.74	25.16	24.87	25.60	26.19	25.05	23.06	23.89	---	22.79	23.19
6	24.08	23.69	25.32	25.00	25.62	26.32	24.94	23.17	23.87	---	22.90	23.10
7	24.41	23.59	25.51	24.96	25.70	26.31	23.72	23.28	23.89	---	22.87	23.10
8	24.00	23.80	25.67	24.72	25.82	26.15	23.58	23.32	23.85	---	22.81	22.95
9	24.00	23.89	25.48	24.41	25.93	25.90	23.54	23.42	23.84	---	22.91	22.90
10	23.85	23.80	25.40	24.13	26.00	25.89	23.33	23.35	23.87	24.24	22.81	22.89
11	23.92	23.88	25.54	24.06	26.04	25.92	23.10	23.42	23.90	24.11	22.85	22.78
12	24.27	23.87	25.21	23.98	26.09	26.00	23.10	23.54	23.83	24.15	22.79	22.83
13	24.31	23.79	24.79	24.13	26.08	26.05	23.19	23.63	23.81	24.05	22.77	22.83
14	24.20	23.79	24.62	24.24	26.07	26.11	23.20	23.71	24.10	23.98	22.80	22.86
15	24.05	23.82	24.64	24.35	26.07	26.21	23.21	23.94	24.49	24.05	23.01	22.78
16	23.91	23.82	24.67	24.66	26.05	26.25	23.20	23.81	24.70	24.00	22.87	22.82
17	24.24	23.78	24.79	24.40	26.01	26.20	23.23	23.57	24.94	23.93	23.29	22.96
18	23.95	23.74	24.89	24.00	25.98	26.34	23.21	23.28	25.07	23.88	23.70	23.29
19	24.51	23.65	24.58	25.08	25.98	26.50	23.20	23.10	25.03	23.82	23.85	23.45
20	23.73	23.69	24.89	25.29	25.98	26.55	23.21	22.92	24.92	23.66	23.17	23.45
21	23.93	23.69	24.78	25.58	25.81	26.55	23.21	22.86	24.82	23.67	23.16	23.31
22	24.07	23.60	25.00	25.65	25.76	26.58	23.19	22.96	24.77	23.66	23.22	23.36
23	24.22	23.73	25.20	25.71	25.75	26.60	23.24	23.26	24.93	23.62	23.20	23.41
24	23.90	23.80	25.32	25.76	25.78	26.63	23.23	23.50	24.96	23.65	23.27	23.39
25	24.50	23.97	25.40	25.63	25.82	26.59	23.26	23.60	25.04	23.62	23.60	23.47
26	24.20	24.43	25.67	25.56	25.95	26.59	23.32	24.22	25.20	23.37	23.13	23.55
27	23.92	25.19	25.50	25.64	26.05	26.57	23.24	24.52	25.18	23.50	23.06	23.70
28	23.92	25.18	25.44	25.69	26.07	26.41	23.23	24.80	24.80	23.29	23.16	23.81
29	23.83	24.97	25.47	25.73	26.11	26.28	23.26	24.94	24.89	23.28	23.15	23.52
30	23.83	24.89	25.42	25.59	---	26.15	23.21	24.78	24.78	23.19	23.08	23.46
31	23.78	---	25.35	25.58	---	26.08	---	24.50	---	23.12	23.07	---
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---	[illegible]	[illegible]

06331000 LITTLE MUDDY RIVER BELOW COW CREEK NEAR WILLISTON, ND

LOCATION.--Lat 48°17'04", long 103°34'21", in NE¼NW¼ sec.5, T.155 N., R.100 W., Williams County, Hydrologic Unit 10110102, on left bank 37 ft (11 m) downstream from centerline of highway, 1 mi (2 km) downstream from Cow Creek, 4 mi (6 km) upstream from Camp Creek, 10 mi (16 km) northeast of Williston, and 13 mi (21 km) upstream from mouth.

DRAINAGE AREA.--875 mi² (2,266 km²), approximately, of which about 100 mi² (260 km²) is probably noncontributing.

PERIOD OF RECORD.--May 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,863.18 ft (567.897 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some small diversions for irrigation. Some regulation by Lake Zahl, Fish and Wildlife Service reservoir 22 mi (35 km) upstream and Blacktail Dam about 15 mi (24 km) upstream.

AVERAGE DISCHARGE.--26 years, 38.5 ft³/s (1.090 m³/s), 27,890 acre-ft/yr (34.4 hm³/yr); median of yearly mean discharges, 29 ft³/s (0.82 m³/s), 21,000 acre-ft/yr (26 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,180 ft³/s (260 m³/s) Apr. 18, 1979, gage height, 12.77 ft (3.892 m); maximum gage height, 13.57 ft (4.136 m) Mar. 27, 1960; minimum discharge, 0.20 ft³/s (0.006 m³/s) Nov. 27, 1960, Feb. 5, 1963, and June 4, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35 ft³/s (0.99 m³/s) Apr. 6, gage height, 6.03 ft (1.838 m), no peak above base of 250 ft³/s (7.08 m³/s); minimum, 4.8 ft³/s (0.14 m³/s) Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	---	[illegible]	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	[illegible]	---
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]

06331570 STONY CREEK NEAR WILLISTON, ND

LOCATION.--Lat 48°09'16", long 103°34'27", in SE¼SE¼SW¼ sec.17, T.154 N., R.100 W., Williams County, Hydrologic Unit 10110101, on left bank at the Hardy Salt Company plant, 1.2 mi (1.9 km) upstream from bridge on State Highway 1804, 3.1 mi (5.0 km) upstream from mouth, and 1.4 mi (2.3 km) east of Williston.

DRAINAGE AREA.--146 mi² (378 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,820 ft (555 m), from topographic map.

REMARKS.--Records good except those for March and April, which are poor. Minor regulation by Epping Dam located 16 mi (25.7 km) upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,120 ft³/s (88.4 m³/s) Apr. 18, 1979, gage height, 15.05 ft (4.587 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6.5 ft³/s (0.18 m³/s) Apr. 12, gage height, 2.68 ft (0.817 m), no peak above base of 150 ft³/s (4.25 m³/s); maximum gage height, 9.23 ft (2.813 m) Mar. 19, ice jam; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.07	.20	.03	.00	.00	1.8	.17	.00	.00	.00	.00
2	.00	.07	.27	.02	.00	.00	1.6	.11	.00	.00	.00	.00
3	.00	.07	.40	.02	.01	.00	1.5	.09	.00	.00	.00	.00
4	.00	.07	.40	.01	.02	.00	2.5	.07	.00	.00	.00	.00
5	.00	.07	.40	.01	.04	.00	4.0	.02	.00	.00	.00	.00
6	.00	.07	.55	.01	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	.00	.08	.61	.00	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	.00	.09	.35	.00	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	.00	.09	.38	.00	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	.00	.11	.45	.00	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

06331570 STONY CREEK NEAR WILLISTON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV												
13...	0915	.26	2720	8.4	-7.5	.0	12.6	91	40	150	330	0
DEC												
19...	1340	.65	2570	8.4	-8.0	.0	12.7	93	24	53	390	0
MAR												
22...	1140	1.2	2120	8.4	3.0	.0	10.3	82	--	--	190	0
APR												
10...	0825	3.2	1400	8.5	6.5	1.0	12.6	95	K3	120	140	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV												
13...	68	56	590	79	14	13	1000	26	860	6.7	800	13
DEC												
19...	52	63	560	69	12	10	950	22	818	6.6	730	9.0
MAR												
22...	31	28	500	84	16	17	666	0	553	4.3	610	8.1
APR												
10...	22	20	280	81	10	5.8	650	7	387	2.4	350	5.9

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
NOV												
13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DEC												
19...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR												
22...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR												
10...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NOV												
13...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	--
DEC												
19...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	--
MAR												
22...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR												
10...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06331570 STONY CREEK NEAR WILLISTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)
NOV 13...	--	--	320	--	--	--	--	--	--	--	--
DEC 10...	--	--	350	--	--	--	--	--	--	--	--
MAR 22...	0	<3	400	10	10	0	0	0	<8	16	0
APR 10...	--	--	240	--	--	--	--	--	--	--	--

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)
NOV 13...	--	40	--	--	--	--	--	--	--	--	--
DEC 10...	--	60	--	--	--	--	--	--	--	--	--
MAR 22...	<25	230	60	0	60	190	50	140	.1	.1	.0
APR 10...	--	160	--	--	--	--	--	--	--	--	--

DATE	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) [illegible]	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) [illegible]	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) [illegible]	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) [illegible]	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) [illegible]	NICKEL, DIS-SOLVED (UG/L AS NI) [illegible]	SELE-NIUM, TOTAL (UG/L AS SE) [illegible]	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) [illegible]	SELE-NIUM, DIS-SOLVED (UG/L AS SE) [illegible]	STRON-TIUM, DIS-SOLVED (UG/L AS SR) [illegible]	VANA-DIUM, DIS-SOLVED (UG/L AS V) [illegible]
MAR 22...	[illegible]	[illegible]	<25	7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) [illegible]	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) [illegible]	ZINC, DIS-SOLVED (UG/L AS ZN) [illegible]	GROSS ALPHA, DIS-SOLVED [illegible]	GROSS ALPHA, SUSP. TOTAL [illegible]	GROSS BETA, DIS-SOLVED [illegible]	GROSS BETA, SUSP. TOTAL [illegible]
MAR 22...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR 10...	--	--	--	--	--	--	--

DATE	GROSS BETA, DIS-SOLVED [illegible]	GROSS BETA, SUSP. TOTAL [illegible]	CARBON, ORGANIC DIS-SOLVED [illegible]	CARBON, ORGANIC SUS-PENDED [illegible]	SEDI-MENT, SUS-PENDED [illegible]	SEDI-MENT, DIS-CHARGE, SUS-PENDED [illegible]
NOV 13...	--	--	[illegible]	[illegible]	[illegible]	[illegible]
DEC 10...	--	--	[illegible]	[illegible]	[illegible]	[illegible]
MAR 22...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR 10...	--	--	[illegible]	[illegible]	[illegible]	[illegible]

06331570 STONY CREEK NEAR WILLISTON, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO APRIL 1980

DATE	NOV 13,79	DEC 10,79	MAR 22,80	APR 10,80
TIME	0915	1540	1140	0825
TOTAL CELLS/ML	2200	1100	160	21000
DIVERSITY: DIVISION	0.6	1.7	1.7	0.7
.CLASS	0.6	1.7	1.7	0.7
..ORDER	0.7	1.9	1.8	0.9
...FAMILY	1.2	2.3	1.9	0.9
....GENUS	1.6	3.0	1.9	0.9

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...OOCYSTACEAE								
....ANKISTRODESMUS	1500#	69	230#	21	5	3	1600	8
....CHLORELLA	--	-	56	5	--	-	--	-
....KIRCHNERIELLA	93	4	*	0	--	-	--	-
....TETRAEDRON	19	1	--	-	--	-	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	220	10	65	6	--	-	--	-
....SCENEDESMUS	74	3	110	9	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	22	2	10	6	1000	5
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	220	10	60	5	--	-	270	1
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	*	0
...NAVICULACEAE								
....NAVICULA	--	-	--	-	5	3	--	-
....PLAGIOTROPIS	--	-	*	0	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	19	1	81	7	35#	22	120	1
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	330#	28	86#	53	18000#	85
....SCHIZOTHRIX	--	-	56	5	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	19	1	--	-	--	-	*	0
....EUTREPTIA	19	1	--	-	--	-	--	-
....TRACHELOMONAS	--	-	56	5	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	--	-	20	13	--	-

NOTE: # = DOMINANT ORGANISM, EQUAL TO OR GREATER THAN 15%
* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06331650 MISSOURI RIVER STAGE GAGE NO. 11 NEAR WILLISTON, ND

LOCATION.--Lat 48°01'55", long 103°31'23", in SE¼ sec.34, T.153 N., R.100 W., Williams County, Hydrologic Unit 10110101, on left bank 10 mi (16 km) southeast of Williston, and at mile 1,534.4 (2,469.4 km).

DRAINAGE AREA.--165,000 mi² (427,000 km²), approximately.

PERIOD OF RECORD.--May 1959 to November 1979 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,810.00 ft (551.688 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 25, 1962, at datum 10.00 ft (3.048 m) lower.

REMARKS.--Stage regulated by upstream reservoirs and Lake Sakakawea.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 43.93 ft (13.390 m) July 22, 1975; minimum daily recorded, 5.49 ft (1.673 m) Apr. 29, 1960, present datum.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34.19	32.97										
2	33.74	33.27										
3	33.69	33.31										
4	34.00	33.27										
5	33.47	33.25										
6	33.82	33.18										
7	---	33.45										
8	---	33.28										
9	33.68	---										
10	33.62	---										
11	33.63	---										
12	33.74	---										
13	33.89	---										
14	33.82	---										
15	33.78	---										
16	33.64	---										
17	33.78	---										
18	33.89	---										
19	33.88	---										
20	32.80	---										
21	33.08	---										
22	33.61	---										
23	33.67	---										
24	33.68	---										
25	33.88	---										
26	33.60	---										
27	33.57	---										
28	33.39	---										
29	33.80	---										
30	33.98	---										
31	33.28	---										
TOTAL	---	---										
MEAN	---	---										
MAX	---	---										
MIN	---	---										

06331680 TOBACCO GARDEN CREEK NEAR WATFORD CITY, ND

LOCATION.--Lat 47°59'33", long 103°09'57", McKenzie County, Hydrologic Unit 10110101, in SE¼SW¼ sec. 12, T. 152 N., R.98 W., on left bank at downstream side of bridge on county highway, 14 mi (22 km) northeast of Watford City.

DRAINAGE AREA.--135 mi² (350 km²), approximately.

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water stage recorder. Datum of gage is 1,930.00 ft (588.264 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for the winter period, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft³/s (67.4 m³/s) Apr. 18, 1979, gage height, 16.19 ft (4.935 m); no flow Jan. 28 to Mar. 1, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15 ft³/s (0.42 m³/s) Mar. 30, gage height, 8.29 ft (2.527 m), no peak above base of 100 ft³/s (2.83 m³/s); minimum daily discharge, 0.15 ft³/s (0.004 m³/s) Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.32	.92	.75	.70	.35	.25	11	.95	.27	.37	.21	.32
2	.32	.90	.75	.70	.35	.25	9.0	.95	.22	.30	.15	.38
3	.27	.92	.80	.70	.35	.25	7.5	.95	.27	.27	.25	.38
4	.27	.95	.90	.70	.40	.20	6.8	.95	.45	.32	.33	.45
5	.32	.95	1.1	.70	.40	.20	6.5	.87	.38	.34	.26	.45
6	.27	.93	.95	.65	.40	.20	7.3	.95	.36	.44	.26	.45
7	.32	.92	.90	.65	.35	.20	7.6	.95	.35	.37	.29	.45
8	.57	.94	.90	.60	.35	.20	7.7	.95	.31	.37	.32	.51
9	.51	.84	.90	.60	.35	.25	7.1	1.0	.31	.46	.32	.63
10	.45	.81	.90	.60	.35	.25	6.1	1.0	.30	.43	.27	.57
11	.38	.79	.85	.55	.35	.25	5.5	.87	.31	.45	.22	.45
12	.38	.79	.85	.55	.35	.25	5.3	.87	.43	.46	.19	.57
13	.45	.82	.80	.55	.35	.25	4.1	.87	.57	.48	.22	.63
14	.45	.83	.80	.60	.35	.27	4.0	.79	.47	.46	.22	.79
15	.51	.87	.75	.60	.32	.32	3.4	.63	.52	.40	.27	.95
16	.51	.87	.70	.60	.30	.38	3.8	.63	.68	.43	.38	.79
17	.45	.87	.70	.60	.30	.45	3.5	.63	.63	.43	.57	.57
18	.38	1.0	.75	.60	.30	.51	2.9	.63	.62	.43	1.4	.63
19	.45	1.3	.85	.55	.30	.67	2.6	.57	.55	.43	2.7	.70
20	.63	1.4	.90	.55	.30	.86	2.3	.57	.62	.47	2.3	.79
21	.63	1.3	.90	.55	.30	1.3	2.0	.51	.59	.45	1.6	.87
22	.67	1.2	.90	.55	.30	4.5	1.6	.51	.60	.47	1.0	.63
23	.67	.95	.85	.55	.30	7.1	1.5	.38	.51	.44	.63	.87
24	.70	.90	.80	.55	.25	6.2	1.3	.38	.44	.40	.51	.79
25	.73	.85	.80	.50	.25	5.7	1.1	.32	.46	.41	.38	.70
26	.83	.80	.80	.50	.25	5.6	.87	.32	.41	.42	.38	.70
27	.82	.80	.80	.45	.30	6.7	.95	.27	.44	.38	.32	.57
28	.80	.75	.80	.40	.30	7.7	1.2	.27	.48	.33	.32	.51
29	.82	.75	.80	.40	.25	9.0	1.2	.22	.50	.31	.32	.51
30	.87	.75	.75	.35	---	11	1.0	.27	.48	.31	.32	.45
31	.92	---	.70	.35	---	11	---	.22	---	.28	.32	---
TOTAL	16.67	27.67	25.70	17.50	9.37	82.26	126.72	20.25	13.53	12.31	17.23	18.06
MEAN	.54	.92	.83	.56	.32	2.65	4.22	.65	.45	.40	.56	.60
MAX	.92	1.4	1.1	.70	.40	11	11	1.0	.68	.48	2.7	.95
MIN	.27	.75	.70	.35	.25	.20	.87	.22	.22	.27	.15	.32
AC-FT	33	55	51	35	19	163	251	40	27	24	34	36

CAL YR 1979 TOTAL 5052.07 MEAN 13.8 MAX 1930 MIN .15 AC-FT 10020
WTR YR 1980 TOTAL 387.27 MEAN 1.06 MAX 11 MIN .15 AC-FT 768

06331850 BEAVER CREEK NEAR RAY, ND

LOCATION.--Lat 48°10'52", long 103°01'26", in SW¼SE¼SE¼ sec.33, T.155 N., R.96 W., Williams County, Hydrologic Unit 10110101, on left bank 40 ft (12 m) upstream from bridge on North Dakota State Highway 1804, 12 mi (19 km) southeast of Ray, and 1.4 mi (2.3 km) upstream from mouth.

DRAINAGE AREA.--102 mi² (264 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,870 ft (570 m), from topographic map.

REMARKS.--Records fair except those for period January to April, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 5,000 ft³/s (142 m³/s) Apr. 18, 1979, gage height, 12.12 ft (3.694 m), ice jam; no flow Mar. 10-17, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 20 ft³/s (0.56 m³/s) Apr. 10, gage height, 9.25 ft (2.819 m), backwater from ice, no peak above base of 100 ft³/s (2.83 m³/s); minimum daily discharge, 0.09 ft³/s (0.003 m³/s) July 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.65	.65	.98	1.1	.50	.70	8.5	1.6	.81	.30	.48	.21
2	.75	.56	.86	.86	.50	.60	8.5	1.6	.70	.30	.60	.18
3	.65	.75	1.1	.35	.50	.40	8.8	1.8	.60	.25	.56	.21
4	.65	.98	1.6	.86	.50	.40	9.5	1.9	.81	.25	.65	.21
5	.75	.98	2.6	.86	.48	.45	10	1.8	.70	.25	.87	.18
6	.75	.98	3.4	.80	.50	.45	10	1.2	.56	.21	.70	.18
7	.75	.98	3.4	.70	.50	.45	10	.75	1.1	.18	.65	.15
8	.86	.98	2.2	.65	.50	.45	9.4	.87	.75	.47	.70	.12
9	.86	.75	2.0	.41	.50	.50	9.0	.93	.56	.15	.65	.28
10	.86	.75	2.0	.50	.50	.30	9.8	1.1	.48	.15	.56	.18
11	.98	.86	1.3	.60	.50	.20	9.0	1.1	.52	.09	.52	.93
12	.98	.86	.98	.70	.45	.20	8.8	1.2	1.1	.09	.56	.75
13	1.1	.86	.86	.80	.45	.20	8.1	1.2	1.4	.15	.65	.60
14	1.1	.98	.98	.70	.40	.20	7.9	1.2	1.2	.35	.60	.25
15	1.1	1.2	.86	.70	.45	.30	7.5	1.3	.87	.25	.87	.35
16	.86	1.4	.14	.60	.45	.30	7.0	1.3	.70	.35	2.5	.21
17	.65	1.8	.20	.55	.45	.40	6.0	1.4	.60	.25	1.6	.25
18	.75	2.2	.98	.50	.50	.50	5.7	1.3	.65	.30	1.1	.41
19	.98	2.4	.98	.50	.50	.40	5.2	1.2	.48	.12	.93	.65
20	2.0	2.2	.98	.55	.50	.30	5.5	1.1	.70	.15	.93	.30
21	.98	1.6	1.6	.60	.45	.25	5.0	1.1	.60	.15	.93	.48
22	.98	1.6	1.4	.65	.45	.20	4.2	1.0	.75	.15	.75	.35
23	1.1	1.6	1.3	.70	.45	.40	3.6	.81	1.1	.49	.75	.30
24	1.1	1.4	1.3	.65	.45	.90	3.3	.70	.56	.30	.75	.41
25	1.2	1.4	1.4	.60	.50	2.0	2.6	.70	.25	.41	.75	.35
26	1.4	1.4	2.0	.50	.50	3.0	2.6	.60	.15	.56	.60	.41
27	.86	1.4	2.0	.40	.50	4.2	2.4	.65	.30	.65	.52	.48
28	.75	.98	1.8	.40	.55	6.2	2.0	.65	.48	.65	.48	.56
29	.75	.48	1.4	.40	.60	7.2	2.6	.60	.48	.65	.35	.60
30	.75	.75	1.3	.45	---	7.7	2.3	.65	.30	.65	.35	.60
31	.75	---	1.1	.50	---	8.3	---	1.0	---	.48	.25	---
TOTAL	28.65	35.73	45.00	19.14	14.08	48.05	194.8	34.31	20.26	9.75	23.16	11.14
MEAN	.92	1.19	1.45	.62	.49	1.55	6.49	1.11	.68	.31	.75	.37
MAX	2.0	2.4	3.4	1.1	.60	8.3	10	1.9	1.4	.65	2.5	.93
MIN	.65	.48	.14	.35	.40	.20	2.0	.60	.15	.09	.25	.12
AC-FT	57	71	89	38	28	95	386	68	40	19	46	22

CAL YR 1979 TOTAL 4493.09 MEAN 12.3 MAX 1200 MIN .14 AC-FT 8910
WTR YR 1980 TOTAL 484.07 MEAN 1.32 MAX 10 MIN .09 AC-FT 960

06331850 BEAVER CREEK NEAR RAY, ND--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
17...	1530	.72	2100	8.4	15.0	8.5	10.7	96	K13	440	470	0
NOV												
14...	1330	1.1	2100	8.3	9.5	.0	13.2	99	K3	560	480	0
DEC												
11...	1405	1.4	2340	8.2	-15.0	.0	12.8	93	K10	60	590	0
JAN												
08...	1345	.62	2120	8.0	-27.0	.0	10.8	79	K17	24	530	0
FEB												
05...	1250	.48	2240	7.9	-3.0	.0	10.2	74	22	360	490	0
MAR												
28...	1050	6.2	1640	8.3	3.0	1.0	11.2	83	K12	>10000	360	0
APR												
10...	1345	8.2	1570	8.3	7.0	4.0	11.9	96	K1	260	350	0
MAY												
13...	1515	1.3	2075	8.3	12.0	15.0	10.7	110	62	200	450	0
JUN												
03...	1220	.59	2080	8.4	23.0	18.0	8.5	98	400	220	460	0
JUL												
08...	0955	.21	2070	8.3	35.0	22.0	7.6	93	360	650	400	0
23...	0810	.15	--	--	22.0	22.0	--	--	--	--	--	--
AUG												
05...	1300	.75	2090	8.5	20.0	20.0	10.3	120	60	280	400	0
SEP												
09...	1245	.13	2100	8.2	20.0	18.0	9.6	105	150	930	420	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
17...	69	73	340	60	6.8	10	655	6	547	4.3	630	15
NOV												
14...	75	71	360	61	7.2	12	676	0	554	5.4	660	18
DEC												
11...	83	92	390	59	7.0	10	754	0	618	7.6	730	14
JAN												
08...	85	76	380	79	7.2	9.5	737	0	604	12	680	16
FEB												
05...	90	64	340	60	6.7	9.7	734	0	602	15	640	13
MAR												
28...	63	50	250	59	6.5	11	510	0	418	4.1	510	11
APR												
10...	60	48	230	58	5.4	8.6	495	0	406	4.0	450	12
MAY												
13...	71	67	340	61	8.0	10	671	0	550	5.4	660	18
JUN												
03...	67	71	360	62	8.4	11	626	10	530	4.1	640	18
JUL												
08...	52	66	340	64	7.4	11	627	0	514	5.0	610	23
23...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
05...	53	66	350	65	7.6	11	595	12	508	3.1	620	19
SEP												
09...	59	66	350	64	7.4	7.9	627	0	514	6.3	630	21

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06331850 BEAVER CREEK NEAR RAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT 17...	.3	16	1440	1480	1.96	2.80	.05	--	.11	.13	.64	.75
NOV 14...	.3	17	1480	1550	2.01	4.48	.04	.06	.02	.02	.54	.56
DEC 11...	.3	16	--	1710	2.33	6.46	.15	.07	.06	.07	.50	.56
JAN 08...	.4	18	1550	1630	2.11	2.59	.02	.02	.05	.06	.48	.53
FEB 05...	.3	20	1560	1540	2.12	2.02	.04	.05	.01	.01	.67	.68
MAR 28...	.3	13	1150	1160	1.56	19.3	.22	.22	.06	.07	1.0	1.1
APR 10...	.2	12	1040	1070	1.41	23.0	.11	.10	.08	.10	.75	.83
MAY 13...	.3	13	1460	1510	1.99	5.12	.03	.04	.01	.01	.80	.81
JUN 03...	.3	4.6	1490	1490	2.03	2.37	.03	.01	.04	.05	.60	.64
JUL 08...	.5	4.6	1470	1420	2.00	.83	.02	.00	.08	.10	.85	.93
23...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 05...	.5	7.3	1460	1430	1.99	2.96	.00	.00	.08	.10	2.6	2.7
SEP 09...	.4	8.2	1690	1450	2.30	.59	.00	.00	.00	.00	.99	.99

DATE	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA) (01006)
OCT 17...	.80	3.5	.030	.09	.010	--	--	--	--	--	--
NOV 14...	.60	2.7	.020	.06	.010	--	--	--	--	--	--
DEC 11...	.71	3.1	.010	.03	.000	--	--	--	--	--	--
JAN 08...	.55	2.4	.020	.06	.010	--	--	--	--	--	--
FEB 05...	.72	3.2	.040	.12	.010	--	--	--	--	--	--
MAR 28...	1.3	5.8	.090	.28	.060	10	2	1	--	200	200
APR 10...	.94	4.2	.070	.21	.030	--	--	--	--	--	--
MAY 13...	.84	3.7	.030	.09	.010	10	--	--	--	--	--
JUN 03...	.67	3.0	.040	.12	.020	50	3	1	6	0	0
JUL 08...	.95	4.2	.000	.00	.020	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
AUG 05...	2.7	12	.040	.12	.040	--	--	--	--	--	--
SEP 09...	.99	4.4	.040	.12	.030	--	--	--	--	--	--

06331850 BEAVER CREEK NEAR RAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT											
17...	--	--	--	--	--	--	290	--	--	--	--
NOV											
14...	--	--	--	--	--	--	270	--	--	--	--
DEC											
11...	--	--	--	--	--	--	300	--	--	--	--
JAN											
08...	--	--	--	--	--	--	270	--	--	--	--
FEB											
05...	--	--	--	--	--	--	250	--	--	--	--
MAR											
28...	40	--	0	0	<1	--	230	0	0	0	--
APR											
10...	--	--	--	--	--	--	230	--	--	--	--
MAY											
13...	30	--	--	--	<3	--	290	--	--	0	--
JUN											
03...	10	100	0	--	<1	0	310	0	0	0	3
JUL											
08...	--	--	--	--	--	--	340	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
AUG											
05...	--	--	--	--	--	--	370	--	--	--	--
SEP											
09...	--	--	--	--	--	--	330	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT											
17...	--	--	--	--	--	--	--	--	30	--	--
NOV											
14...	--	--	--	--	--	--	--	--	20	--	--
DEC											
11...	--	--	--	--	--	--	--	--	60	--	--
JAN											
08...	--	--	--	--	--	--	--	--	30	--	--
FEB											
05...	--	--	--	--	--	--	--	--	30	--	--
MAR											
28...	0	0	<3	--	8	0	<10	--	97	70	9
APR											
10...	--	--	--	--	--	--	--	--	80	--	--
MAY											
13...	--	--	<8	--	--	--	<25	--	34	--	--
JUN											
03...	0	--	<3	10	5	--	<10	8	14	90	50
JUL											
08...	--	--	--	--	--	--	--	--	30	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
AUG											
05...	--	--	--	--	--	--	--	--	50	--	--
SEP											
09...	--	--	--	--	--	--	--	--	40	--	--

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
MAR											
28...	61	140	30	110	.1	.0	.1	--	0	0	<10
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	85	--	--	44	--	.4	--	--	--	--	<25
JUN											
03...	36	80	50	30	.1	.4	.0	.01	0	--	<10

06331850 BEAVER CREEK NEAR RAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
OCT											
17...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	--	--	--	--	--	--	--	--	--	--	--
DEC											
11...	--	--	--	--	--	--	--	--	--	--	--
JAN											
08...	--	--	--	--	--	--	--	--	--	--	--
FEB											
05...	--	--	--	--	--	--	--	--	--	--	--
MAR											
28...	--	4	3	1	--	0	0	0	--	740	<6.0
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	--	--	3	--	--	--	0	--	980	<8.0
JUN											
03...	0	2	2	0	20	0	0	0	0	390	<3.0
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
AUG											
05...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
OCT							
17...	--	--	--	--	--	--	--
NOV							
14...	--	--	--	--	--	--	--
DEC							
11...	--	--	--	--	--	--	--
JAN							
08...	--	--	--	--	--	--	--
FEB							
05...	--	--	--	--	--	--	--
MAR							
28...	50	30	22	--	<17	<.4	12
APR							
10...	--	--	--	--	--	--	--
MAY							
13...	--	--	<8	--	--	--	--
JUN							
03...	30	20	8	20	<20	.4	<10
JUL							
08...	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--
AUG							
05...	--	--	--	--	--	--	--
SEP							
09...	--	--	--	--	--	--	--

06331850 BEAVER CREEK NEAR RAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT							
17...	--	--	--	16	.4	61	.12
NOV							
14...	--	--	--	22	.1	180	.54
DEC							
11...	--	--	--	26	.4	24	.09
JAN							
08...	--	--	--	10	--	79	.13
FEB							
05...	--	--	--	14	1.6	60	.08
MAR							
28...	<.4	12	<.4	14	.7	9	.15
APR							
10...	--	--	--	11	.4	18	.40
MAY							
13...	--	--	--	10	.7	25	.09
JUN							
03...	.7	<9.7	.7	40	.3	23	.04
JUL							
08...	--	--	--	20	--	13	.01
23...	--	--	--	--	--	19	.01
AUG							
05...	--	--	--	16	.3	10	.02
SEP							
09...	--	--	--	11	.4	22	.01

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
JUN										
03...	7	12	22	32	41	48	59	72	82	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
AUG					
05...	28	11.9	4.36	9.37	16.2
SEP					
09...	35	4.33	1.31	4.[illegible]	6.22

06331850 BEAVER CREEK NEAR RAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	OCT 17,79 1530		NOV 14,79 1330		DEC 11,79 1405		JAN 8,80 1345		FEB 5,80 1250		MAR 28,80 1050	
TOTAL CELLS/ML	920		1100		930		1800		440		29000	
DIVERSITY: DIVISION	0.3		2.0		1.2		0.9		0.4		0.1	
.CLASS	1.2		2.3		1.2		0.9		0.4		0.1	
..ORDER	0.0		2.8		1.6		1.2		0.7		0.1	
...FAMILY	0.0		2.9		2.1		2.0		1.8		0.1	
....GENUS	0.0		3.0		2.1		2.1		1.9		0.1	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...OOCYSTACEAE												
....ANKISTRODESMUS	14	2	140	13	50	5	54	3	10	2	*	0
....KIRCHNERIELLA	--	-	14	1	--	-	27	1	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	13	1	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	29	3	--	-	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	14	2	14	1	530#	57	130	7	5	1	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	210#	23	96	9	33	4	67	4	20	5	--	-
....MELOSIRA	14	2	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....AMPHORA	--	-	14	1	--	-	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-	--	-	5	1	--	-
....RHOPALODIA	--	-	--	-	--	-	--	-	5	1	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	180#	19	1200#	66	300#	69	160	1
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	8	1	54	3	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	27	1	15	3	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	25	3	13	1	10	2	--	-
...NAVICULACEAE												
....NAVICULA	--	-	--	-	8	1	13	1	35	8	--	-
....PLEUROSIGMA	--	-	--	-	--	-	--	-	5	1	--	-
...NITZSCHIACEAE												
....NITZSCHIA	300#	33	27	3	42	5	94	5	10	2	*	0
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	8	1	27	1	--	-	--	-
.CHRYSOPHYCEAE	230#	25	--	-	--	-	--	-	--	-	--	-
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	100	11	150	14	--	-	--	-	--	-	--	-
....KEPHYRION	--	-	27	3	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	150	14	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	140	13	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	270#	26	--	-	--	-	--	-	29000#	99
....SPIRULINA	--	-	--	-	--	-	--	-	--	-	190	1
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	42	5	40	2	15	3	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	27	3	8	1	40	2	--	-	*	0
..PERIDINIALES												
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	13	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06331850 BEAVER CREEK NEAR RAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	APR 10,80 1345	MAY 13,80 1515	JUN 3,80 1220	JUL 8,80 0955	AUG 5,80 1300	SEP 9,80 1245
TOTAL CELLS/ML	53000	1000	1100	3400	90	1200
DIVERSITY: DIVISION	0.3	1.9	1.4	1.7	0.6	1.5
.CLASS	0.3	1.9	1.4	1.7	0.6	1.5
..ORDER	0.3	2.2	2.1	2.3	1.4	2.0
...FAMILY	0.4	2.4	2.7	2.4	1.8	2.2
....GENUS	0.4	2.4	2.7	2.5	1.8	2.3

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...OOCYSTACEAE												
....ANKISTRODESMUS	610	1	230#	22	13	1	61	2	13	14	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	190#	18	81	2	--	-	--	-
....SCENEDESMUS	--	-	52	5	--	-	61	2	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	52	4
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	*	0	64	6	52	5	870#	26	--	-	450#	37
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	*	0	210#	20	13	1	890#	26	39#	43	400#	33
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	26	2
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	13	1
...CYMBELLACEAE												
....AMPHORA	--	-	--	-	--	-	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-	--	-	--	-	--	-
....RHOPALODIA	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	540	1	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	13	1	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	13	1
...NAVICULACEAE												
....NAVICULA	--	-	--	-	--	-	20	1	13	14	13	1
....PLEUROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	*	0	13	1	52	5	20	1	26#	29	52	4
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE	--	-	--	-	--	-	--	-	--	-	--	-
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-	--	-
....KEPHYRION	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	20	1	--	-	180	15
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	13	1	--	-	--	-	26	2
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	350#	34	100	10	890#	26	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	410	1	--	-	230#	22	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	50000#	96	--	-	330#	32	400	12	--	-	--	-
....SPIRULINA	*	0	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	26	2	20	1	--	-	--	-
....TRACHELOMONAS	*	0	120	11	13	1	20	1	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	270	1	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES												
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06332000 WHITE EARTH RIVER AT WHITE EARTH, ND

LOCATION.--Lat 48°22'35", long 102°46'00", in SE¼SW¼ sec.36, T.157 N., R.94 W., Mountrail County, Hydrologic Unit 10110101, 35 ft (11 m) upstream from bridge on county highway, and 0.2 mi (0.3 km) east of White Earth.

DRAINAGE AREA.--780 mi^2 (2,020 km^2), approximately, of which about 290 mi^2 (750 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1954 to current year.

REVISED RECORDS.--WSP 2117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,070.00 ft (630.936 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 25, 1959, nonrecording gages at site 0.2 mi (0.3 km) upstream at datum 1.64 ft (0.500 m) higher.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by White Earth Reservoir 12 mi (19 km) upstream beginning August 1970, capacity, 1,600 acre-ft (1.97 hm^3).

AVERAGE DISCHARGE.--26 years, 28.6 ft^3/s (0.810 m^3/s), 20,720 acre-ft/yr (25.5 hm^3/yr); median of yearly mean discharges, 15 ft^3/s (0.42 m^3/s), 10,900 acre-ft/yr (13 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft^3/s (147 m^3/s) Apr. 18, 1979, gage height, 20.12 ft (6.133 m); no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1929 reached a stage of 21.8 ft (6.64 m) former site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 89 ft^3/s (2.52 m^3/s) Apr. 7, gage height, 3.96 ft (1.207 m); minimum daily, 0.13 ft^3/s (0.004 m^3/s) Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	3.9	2.0	2.5	1.3	1.2	41	7.1	2.3	2.4	.13	2.3
2	2.4	3.9	2.0	2.5	1.3	1.2	40	7.0	2.3	2.1	.22	2.7
3	2.3	3.8	2.5	2.3	1.3	1.2	44	6.4	2.1	1.6	.47	2.6
4	2.3	3.6	3.5	2.2	1.3	1.2	51	6.1	2.5	1.9	1.3	2.5
5	2.3	3.4	4.4	2.2	1.3	1.2	58	6.3	3.8	2.0	2.8	2.2
6	2.2	3.4	4.0	2.0	1.3	1.2	58	5.8	3.0	2.0	2.7	1.7
7	2.2	2.8	4.0	1.8	1.3	1.2	68	5.6	3.6	1.7	2.1	1.6
8	2.4	2.4	3.5	1.7	1.3	1.2	61	6.8	3.6	1.5	2.0	1.7
9	3.4	2.4	3.5	1.7	1.3	1.2	52	8.6	2.5	1.4	1.9	1.5
10	3.7	2.4	3.5	1.7	1.3	1.2	46	7.7	1.4	1.3	2.2	1.5
11	3.7	2.6	3.0	1.7	1.2	1.2	42	5.9	1.3	.80	2.6	1.8
12	3.4	2.6	3.0	1.7	1.2	1.2	36	4.9	2.0	.40	2.3	6.1
13	3.5	2.6	2.5	1.7	1.2	1.2	36	4.2	3.6	.34	2.2	4.9
14	3.5	2.6	2.5	1.6	1.2	1.2	31	4.2	[illegible]	.51	1.8	3.2
15	3.2	2.8	2.0	2.0	1.2	1.2	30	4.0	[illegible]	1.1	1.8	2.3
16	3.5	3.2	2.0	2.0	1.2	1.3	27	4.0	1.9	1.4	6.9	2.3
17	3.2	3.4	2.0	2.0	1.2	1.3	26	4.2	1.7	1.3	9.0	3.1
18	3.2	3.3	2.2	2.0	1.2	1.4	24	3.9	2.0	1.2	5.0	3.6
19	3.5	3.3	2.5	1.9	1.2	1.6	21	3.9	2.1	1.1	3.2	4.9
20	4.9	3.2	2.5	1.8	1.2	8.5	19	3.5	1.8	1.5	2.5	4.5
21	4.6	2.8	2.5	1.8	1.2	23	17	3.4	1.5	1.8	2.2	3.5
22	4.5	2.5	2.5	1.8	1.2	18	16	3.2	1.6	1.6	2.0	3.8
23	3.9	2.3	2.5	1.8	1.2	16	13	2.6	2.7	1.3	2.0	3.0
24	4.0	2.3	2.5	1.8	1.2	15	11	2.2	3.8	.96	2.2	2.6
25	4.0	2.2	2.5	1.7	1.2	22	10	2.0	2.6	.70	2.0	2.7
26	4.2	2.2	2.5	1.6	1.2	25	9.5	1.8	1.4	.86	1.8	2.5
27	4.3	2.2	2.5	1.5	1.2	30	8.6	1.8	1.3	.82	1.3	2.0
28	3.9	2.1	2.5	1.4	1.2	40	8.4	1.8	4.6	.93	1.3	1.9
29	3.7	2.0	2.5	1.4	1.2	50	7.7	1.7	4.4	.80	1.6	1.9
30	3.3	2.0	2.5	1.3	---	55	7.5	1.4	3.1	.59	1.7	2.4
31	3.4	---	2.5	1.3	---	50	---	1.8	---	.24	2.0	---
TOTAL	105.4	84.6	84.6	56.6	35.8	376.1	919.7	133.8	75.4	38.15	73.22	83.3
MEAN	3.40	2.82	2.73	1.83	1.23	12.1	30.7	4.32	2.51	1.23	2.36	2.78
MAX	4.9	3.9	4.4	2.5	1.3	55	68	8.6	4.6	2.4	9.0	6.1
MIN	2.2	2.0	2.0	1.3	1.2	1.2	7.5	1.4	1.3	.24	.13	1.5
AC-FT	209	168	168	112	71	746	1820	265	150	76	145	165

CAL YR 1979 TOTAL 25195.72 MEAN 69.0 MAX 3620 MIN .35 AC-FT 49980
WTR YR 1980 TOTAL 2066.67 MEAN 5.65 MAX 68 MIN .13 AC-FT 4100

06332000 WHITE EARTH RIVER AT WHITE EARTH, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
04...	1440	2.2	2100	--	10.5	--	--	--	--
NOV									
06...	1215	3.4	2230	8.4	1.0	310	0	45	48
DEC									
05...	1015	4.3	2350	8.3	.5	290	0	48	41
JAN									
09...	1530	1.7	2450	8.3	.5	340	0	26	67
FEB									
13...	1500	1.2	1900	8.2	.5	250	0	42	35
MAR									
19...	1210	1.6	1960	E8.0	.0	220	0	37	31
APR									
02...	1445	44	1500	--	1.0	--	--	--	--
09...	1025	62	990	8.1	1.0	270	0	41	41
15...	1540	28	1470	--	9.5	--	--	--	--
MAY									
08...	1050	5.9	2100	8.4	10.5	330	0	46	52
JUN									
03...	0905	2.0	2250	8.5	16.0	270	0	39	42
JUL									
08...	1630	1.5	2230	E9.0	20.0	220	0	31	35
AUG									
05...	1550	2.9	2220	8.5	19.0	190	0	26	30
SEP									
03...	0930	2.5	2150	8.3	15.0	220	0	31	35

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT									
04...	--	--	--	--	--	--	--	--	--
NOV									
06...	490	77	12	6.3	972	11	816	6.3	490
DEC									
05...	550	80	14	5.7	1040	0	853	8.3	530
JAN									
09...	510	76	12	6.6	991	0	813	7.9	530
FEB									
13...	420	78	12	4.9	946	0	776	9.6	370
MAR									
19...	350	77	10	4.3	829	0	680	--	300
APR									
02...	--	--	--	--	--	--	--	--	--
09...	210	62	5.5	8.2	430	0	353	5.5	360
15...	--	--	--	--	--	--	--	--	--
MAY									
08...	380	71	9.1	8.3	793	0	650	5.1	460
JUN									
03...	460	78	12	7.4	916	0	751	4.6	420
JUL									
08...	500	83	15	5.9	969	8	808	.4	450
AUG									
05...	510	85	16	6.9	955	20	817	5.0	420
SEP									
03...	460	81	13	6.1	881	10	739	7.2	380

E - Estimated.

06332000 WHITE EARTH RIVER AT WHITE EARTH, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)
OCT									
04...	--	--	--	--	--	--	--	--	--
NOV									
06...	45	.4	17	1630	2.24	15.1	550	220	60
DEC									
05...	41	.5	20	1750	2.37	20.2	680	180	80
JAN									
09...	58	.4	26	1710	2.35	7.94	480	160	250
FEB									
13...	25	.4	24	1390	1.97	4.70	390	160	260
MAR									
19...	18	.3	21	1170	1.62	5.14	260	180	200
APR									
02...	--	--	--	--	--	--	--	--	--
09...	23	.1	12	909	1.27	156	520	110	150
15...	--	--	--	--	--	--	--	--	--
MAY									
08...	52	.3	9.6	1400	1.88	22.0	130	90	50
JUN									
03...	64	.5	14	1500	2.08	8.26	530	60	130
JUL									
08...	41	.5	15	1570	2.23	6.64	340	30	30
AUG									
05...	37	.5	16	1540	2.11	12.1	620	40	20
SEP									
03...	56	.4	13	1430	1.90	9.45	460	130	30

06332515 BEAR DEN CREEK NEAR MANDAREE, ND
(Hydrologic bench-mark station)

LOCATION.--Lat 47°47'14", long 102°46'05", in NW¼ sec.30, T.150 N., R.94 W., McKenzie County, Hydrologic Unit 10110101, on right bank 0.5 mi (0.8 km) upstream from county highway culvert, and 5.5 mi (8.8 km) northwest of Mandaree.

DRAINAGE AREA.--74 mi² (192 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,947.58 ft (593.622 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--14 years, 8.83 ft³/s (0.250 m³/s), 6,400 acre-ft/yr (7.89 hm³/yr); median of yearly mean discharges, 8.6 ft³/s (0.24 m³/s), 6,200 acre-ft/yr (7.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,840 ft³/s (80.4 m³/s) Mar. 13, 1972, gage height, 9.02 ft (2.749 m); maximum gage height, 10.03 ft (3.057 m) Apr. 6, 1969; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 10 ft³/s (0.28 m³/s) Apr. 4, gage height unknown, no peak above base of 100 ft³/s (2.83 m³/s); no flow Jan. 30 to Mar. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.27	.22	.18	.18	.00	.00	8.0	.17	.28	.22	.18	.20
2	.27	.22	.18	.16	.00	.00	8.0	.16	.30	.20	.18	.18
3	.24	.22	.20	.16	.00	.00	9.0	.15	.31	.19	.18	.16
4	.24	.22	.24	.14	.00	.00	10	.18	.30	.18	.19	.15
5	.24	.22	.28	.12	.00	.00	8.0	.18	.30	.17	.20	.14
6	.24	.22	.25	.10	.00	.00	6.0	.17	.30	.20	.20	.12
7	.24	.22	.24	.08	.00	.00	5.0	.20	.30	.20	.18	.10
8	.28	.22	.18	.06	.00	.00	4.0	.23	.30	.16	.18	.10
9	.26	.22	.18	.06	.00	.00	3.0	.24	.29	.16	.25	.10
10	.24	.22	.18	.04	.00	.00	2.5	.24	.27	.16	.24	.10
11	.24	.24	.16	.02	.00	.00	2.3	.24	.27	.14	.18	.10
12	.24	.24	.16	.01	.00	.00	2.3	.24	.30	.12	.18	.11
13	.24	.24	.16	.01	.00	.00	2.0	.24	.41	.12	.16	.12
14	.24	.24	.18	.01	.00	.00	1.9	.23	.37	.13	.16	.12
15	.24	.24	.18	.01	.00	.00	1.7	.24	.33	.14	.17	.15
16	.24	.24	.16	.02	.00	.00	1.8	.24	.33	.17	.44	.18
17	.24	.24	.16	.02	.00	.00	1.4	.24	.30	.18	.24	.20
18	.24	.24	.18	.02	.00	.00	1.4	.24	.28	.17	.18	.20
19	.26	.24	.20	.02	.00	.30	1.1	.24	.27	.18	.10	.20
20	.26	.24	.20	.04	.00	.50	.93	.24	.27	.18	.09	.20
21	.26	.24	.20	.04	.00	.50	.82	.24	.27	.18	.10	.24
22	.24	.24	.20	.04	.00	.50	.75	.24	.30	.18	.10	.24
23	.24	.24	.20	.06	.00	.50	.68	.24	.29	.17	.14	.21
24	.24	.24	.20	.06	.00	1.0	.54	.24	.24	.18	.14	.20
25	.24	.22	.20	.06	.00	1.5	.43	.24	.22	.18	.18	.20
26	.24	.22	.20	.04	.00	2.0	.37	.23	.20	.18	.18	.17
27	.24	.22	.20	.04	.00	2.5	.29	.24	.20	.19	.16	.14
28	.24	.20	.20	.02	.00	3.0	.23	.23	.24	.18	.16	.14
29	.24	.20	.20	.01	.00	4.0	.20	.22	.22	.18	.19	.14
30	.24	.18	.20	.00	---	5.0	.20	.15	.22	.18	.22	.14
31	.22	---	.20	.00	---	6.5	---	.23	---	.18	.20	---
TOTAL	7.60	6.80	6.05	1.65	.00	27.80	84.84	6.81	8.48	5.35	5.65	4.75
MEAN	.25	.23	.20	.053	.000	.90	2.83	.22	.28	.17	.18	.16
MAX	.28	.24	.28	.18	.00	6.5	10	.24	.41	.22	.44	.24
MIN	.22	.18	.16	.00	.00	.00	.20	.15	.20	.12	.09	.10
AC-FT	15	13	12	3.3	.00	55	168	14	17	11	11	9.4

CAL YR 1979 TOTAL 3443.36 MEAN 9.43 MAX 1080 MIN .00 AC-FT 6830
WTR YR 1980 TOTAL 165.78 MEAN .45 MAX 10 MIN .00 AC-FT 329

06332515 BEAR DEN CREEK NEAR MANDAREE, ND--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT											
08...	1250	.28	2900	8.7	12.0	9.8	101	K70	K56	K35	180
NOV											
12...	1335	.24	3000	8.3	1.5	11.2	86	K70	K37	K55	220
DEC											
10...	1200	.17	2800	8.2	1.0	10.2	65	K25	K22	K80	230
JAN											
14...	1345	.01	3650	8.1	.5	10.6	70	K20	K20	K30	280
MAR											
31...	1325	6.2	1700	8.0	.5	11.4	85	K70	K56	K50	180
MAY											
12...	1250	.25	3200	8.3	15.0	10.0	102	K55	K44	K50	210
JUN											
09...	1500	.26	3140	8.5	25.0	6.4	111	--	--	--	170
JUL											
14...	1240	.13	3190	8.8	25.0	8.4	--	>8000	>6000	210	160
AUG											
11...	1015	.18	3150	8.5	20.5	9.0	107	780	260	K300	160
SEP											
08...	1230	.10	2990	8.5	18.5	9.6	109	750	K570	K380	150

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT										
08...	0	24	28	700	96	23	710	9.1	820	830
NOV										
12...	--	41	29	690	87	20	690	6.6	900	830
DEC										
10...	0	40	31	680	93	20	690	6.1	900	760
JAN										
14...	0	55	34	880	93	23	890	7.5	1070	980
MAR										
31...	0	35	23	360	80	12	370	8.4	340	580
MAY										
12...	0	34	30	680	87	23	690	8.5	800	870
JUN										
09...	0	22	28	730	90	24	740	8.4	870	880
JUL										
14...	0	20	27	760	91	26	770	9.3	960	860
AUG										
11...	0	20	26	770	91	27	780	10	930	800
SEP										
08...	0	22	23	660	90	23	670	9.3	860	760

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06332515 BEAR DEN CREEK NEAR MANDAREE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT 08...	5.9	.5	6.0	2140	2100	2.91	1.62	.01	--	.030
NOV 12...	4.1	.4	13	2230	2150	3.03	1.45	.13	.08	.010
DEC 10...	45	.3	16	2130	2120	2.90	.98	.08	.05	.010
JAN 14...	4.5	.5	18	2540	2620	3.45	.07	.03	.03	.030
MAR 31...	4.2	.3	9.1	1070	1230	1.46	17.9	.08	.23	.180
MAY 12...	4.0	.3	5.4	2110	2110	2.87	1.42	.03	.01	.050
JUN 09...	5.0	.2	2.2	2230	2200	3.03	1.57	.00	.00	.040
JUL 14...	3.8	.8	6.1	2260	2260	3.07	.79	.00	.00	.310
AUG 11...	5.3	.6	1.9	2240	2190	3.05	1.09	1.2	.02	.190
SEP 08...	17	.5	4.6	2060	2010	2.80	.56	.00	.00	--

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)
OCT 08...	.09	--	--	--	--	--	--	--	--	--
NOV 12...	.03	--	--	2	0	2	300	270	30	<1
DEC 10...	.03	.00	.00	--	--	--	--	--	--	--
JAN 14...	.09	--	--	--	--	--	--	--	--	--
MAR 31...	.55	.03	.09	--	--	--	--	--	--	--
MAY 12...	.15	--	--	2	0	2	100	70	30	<3
JUN 09...	.12	.03	.09	--	--	--	--	--	--	--
JUL 14...	.95	.22	.67	--	--	--	--	--	--	--
AUG 11...	.58	.00	.00	--	--	--	--	--	--	--
SEP 08...	--	.04	.12	--	--	--	--	--	--	--

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)
NOV 12...	0	0	<1	4	4	0	<3	0	0	<10	550	500
MAY 12...	0	0	<3	10	--	--	<8	4	<4	<25	1100	1000
JUN 09...	--	--	--	--	--	--	--	--	--	--	--	--

06332515 BEAR DEN CREEK NEAR MANDAREE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
NOV 12...	48	4	<4	<10	100	800	740	60	.1	.0	.1	<10
MAY 12...	57	2	<2	<25	83	110	80	26	.1	.0	.1	<25
JUN 09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)
NOV 12...	0	0	0	0	0	0	460	<6.0	20	0	20	<38
MAY 12...	0	0	0	0	0	0	470	<8.0	30	30	<8	--
JUN 09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)	PCB, TOTAL (UG/L) (39516)
NOV 12...	<1.5	<13	<1.3	<13	<1.4	.07	4.3	--	--	.00	.0
MAY 12...	--	--	--	--	--	--	--	--	--	.00	--
JUN 09...	--	--	--	--	--	--	--	24	1.0	--	--

DATE	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)
NOV 12...	0	.00	.0	.0	0	.00	.0	.00	.0	.00	.0

DATE	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (3939)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)
NOV 12...	.00	.00	.0	.00	.0	.00	.00	.0	.00	.0	.00
MAY 12...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	--	--	--	--	--	--	--	--	--	--	--

06332515 BEAR DEN CREEK NEAR MANDAREE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	MALA- THION, TOTAL (UG/L) (39530)	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARA- THION, TOTAL (UG/L) (39600)	METHYL TRI- THION, TOTAL (UG/L) (39790)	MIREX, TOTAL (UG/L) (39755)	PARA- THION, TOTAL (UG/L) (39540)	PER- THANE TOTAL (UG/L) (39034)	TOX- APHENE, TOTAL (UG/L) (39400)
OCT										
08...	--	--	--	--	--	--	--	--	--	--
NOV										
12...	.0	.00	.00	.1	.00	.00	.00	.00	.00	0

DATE	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)	TOTAL TRI- THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)
OCT									
08...	--	--	--	--	--	38	.03	1	1
NOV									
12...	0	.00	.00	.00	.00	32	.02	--	--
DEC									
10...	--	--	--	--	--	104	.05	--	--
JAN									
14...	--	--	--	--	--	20	.00	--	--
MAR									
31...	--	--	--	--	--	141	2.4	--	--
MAY									
12...	--	--	--	--	--	81	.05	8	14
JUN									
09...	--	--	--	--	--	8	.01	--	--
JUL									
14...	--	--	--	--	--	18	.01	--	--
AUG									
11...	--	--	--	--	--	25	.01	6	13
SEP									
08...	--	--	--	--	--	26	.01	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
OCT									
08...	6	13	23	36	53	72	83	88	100
NOV									
12...	--	--	--	--	--	--	--	--	--
DEC									
10...	--	--	--	--	--	--	--	--	--
JAN									
14...	--	--	--	--	--	--	--	--	--
MAR									
31...	--	--	--	--	--	--	--	--	--
MAY									
12...	22	24	29	41	57	72	84	100	--
JUN									
09...	--	--	--	--	--	--	--	--	--
JUL									
14...	--	--	--	--	--	--	--	--	--
AUG									
11...	31	37	43	50	60	73	78	94	100
SEP									
08...	--	--	--	--	--	--	--	--	--

06332520 SHELL CREEK NEAR PARSHALL, ND

LOCATION.--Lat 48°03'11", long 102°08'10", in SE¼NE¼ sec.29, T.153 N., R.89 W., Mountrail County, Hydrologic Unit 10110101, on left bank 800 ft (240 m) downstream from bridge on county highway, and 6 mi (10 km) northwest of Parshall.

DRAINAGE AREA.--465 mi² (1,204 km²).

PERIOD OF RECORD.--August 1965 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records good except those for the winter period, which are fair.

AVERAGE DISCHARGE.--15 years, 13.5 ft³/s (0.382 m³/s), 9,780 acre-ft/yr (12.1 hm³/yr); median of yearly mean discharges, 11 ft³/s (0.31 m³/s), 8,000 acre-ft/yr (9.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,400 ft³/s (68.0 m³/s) Apr. 18, 1979, gage height, 8.17 ft (2.490 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 70 ft³/s (1.98 m³/s) Mar. 31, gage height, 3.73 ft (1.137 m); no peak above base of 150 ft³/s (4.25 m³/s); no flow Jan. 27 to Mar. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	1.3	.60	.65	.00	.00	20	5.9	1.6	.60	.02	1.1
2	.64	1.3	.60	.60	.00	.00	14	5.8	1.6	.52	.16	1.0
3	.54	1.4	.90	.50	.00	.00	13	5.7	1.5	.37	.19	.82
4	.54	1.4	1.0	.40	.00	.00	14	5.4	1.7	.52	.88	.88
5	.64	1.5	1.2	.30	.00	.00	12	5.2	1.7	.44	.88	.88
6	.64	1.4	1.3	.30	.00	.00	12	5.0	1.6	.41	.34	.76
7	.59	1.4	1.2	.20	.00	.00	11	4.9	1.8	.42	.41	.59
8	.76	1.3	1.1	.15	.00	.00	8.3	4.8	1.7	.45	.27	.80
9	.70	1.3	1.1	.10	.00	.00	7.4	4.7	1.4	.57	.59	.70
10	.82	1.2	1.1	.08	.00	.00	9.9	4.7	1.2	.54	.64	.60
11	.82	1.2	1.0	.06	.00	.00	9.1	4.6	1.0	.45	.69	1.5
12	.76	1.2	1.0	.04	.00	.00	8.4	4.4	.89	.32	.59	3.0
13	.82	1.2	.90	.04	.00	.00	8.1	3.9	1.2	.30	.61	2.5
14	.76	1.3	.90	.04	.00	.00	8.8	3.8	1.1	.26	.43	2.0
15	.76	1.5	.80	.03	.00	.00	9.2	3.6	1.0	.23	.45	2.0
16	.76	1.6	.70	.03	.00	.20	10	3.4	1.1	.47	2.1	2.0
17	.70	1.6	.80	.03	.00	.50	9.3	3.3	.93	.31	1.8	2.0
18	.80	1.6	.80	.03	.00	.90	8.4	3.3	.82	.44	1.6	2.2
19	1.0	1.5	.70	.03	.00	1.5	7.7	3.1	.81	.35	1.9	2.5
20	1.1	1.5	.80	.02	.00	1.8	7.1	2.9	.65	.54	1.7	2.2
21	1.1	1.4	.80	.02	.00	1.5	6.6	2.5	.59	.40	1.1	3.0
22	1.1	1.4	.80	.02	.00	2.0	6.4	2.3	1.2	.33	.75	3.2
23	1.1	1.3	.75	.02	.00	2.5	6.0	2.0	.72	.22	.76	3.0
24	1.1	1.2	.70	.02	.00	2.8	6.0	1.7	.37	.26	.64	3.0
25	1.1	1.2	.70	.02	.00	2.8	6.3	1.6	.20	.15	.49	2.5
26	1.1	1.1	.70	.01	.00	20	6.5	1.5	.28	.15	.40	2.0
27	1.1	1.1	.75	.00	.00	24	6.5	1.5	.55	.22	.45	1.8
28	1.2	1.0	.80	.00	.00	28	6.5	1.4	.86	.29	.59	1.6
29	1.2	1.0	.80	.00	.00	26	6.3	1.5	.74	.10	.94	1.5
30	1.2	.90	.75	.00	---	25	6.1	1.5	.64	.10	.82	1.4
31	1.3	---	.70	.00	---	35	---	1.6	---	.06	.70	---
TOTAL	27.35	39.30	26.75	3.74	.00	174.50	270.9	107.5	31.45	10.79	23.89	53.03
MEAN	.88	1.31	.86	.12	.000	5.63	9.03	3.47	1.05	.35	.77	1.77
MAX	1.3	1.6	1.3	.65	.00	35	20	5.9	1.8	.60	2.1	3.2
MIN	.54	.90	.60	.00	.00	.00	6.0	1.4	.20	.06	.02	.59
AC-FT	54	78	53	7.4	.00	346	537	213	62	21	47	105

CAL YR 1979 TOTAL 7845.73 MEAN 21.5 MAX 1560 MIN .00 AC-FT 15560
WTR YR 1980 TOTAL 769.20 MEAN 2.10 MAX 35 MIN .00 AC-FT 1530

06335500 LITTLE MISSOURI RIVER AT MARMARTH, ND

LOCATION.--Lat 46°17'44", long 103°55'06", in SW¼ sec.30, T.133 N., R.105 W., Slope County, Hydrologic Unit 10110203, on left bank 90 ft (27 m) downstream from bridge on U.S. Highway 12 in Marmarth, and 1.5 mi (2.4 km) downstream from Little Beaver Creek.

DRAINAGE AREA.--4,640 mi² (12,020 km²), approximately.

PERIOD OF RECORD.--March 1938 to current year.

REVISED RECORDS (WATER YEARS).--WSP 896: 1938-39. WSP 1086: 1943-44. WSP 1279: 1943(M), 1945-46, 1948. WSP 1439: 1950 (calendar year figures).

GAGE.--Water-stage recorder. Datum of gage is 2,686.32 ft (818.790 m) National Geodetic Vertical Datum of 1929. Prior to June 23, 1950, various nonrecording gages on former highway bridge at present site and datum. June 23, 1950, to Sept. 2, 1957, nonrecording gage at site 90 ft (27 m) upstream at present datum.

REMARKS.--Records good except those for the winter period, which are fair. Small diversions for irrigation above station.

AVERAGE DISCHARGE.--42 years, 340 ft³/s (9.629 m³/s), 246,300 acre-ft/yr (304 hm³/yr); median of yearly mean discharges, 276 ft³/s (7.82 m³/s), 200,000 acre-ft/yr (247 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,000 ft³/s (1,270 m³/s) Mar. 23, 1947, gage height, 21.7 ft (6.61 m); maximum gage height, 23.4 ft (7.13 m) Mar. 31, 1952, backwater from ice; no flow for part of most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--According to local residents, the greatest known flood prior to 1953 occurred in June 1907 (stage unknown). Other major floods occurred in March 1913, May 1929, and March 1920 and reached stages of about 21.5 ft (6.55 m), 20.2 ft (6.16 m), and 19.7 ft (6.00 m), respectively. These stages are not comparable to stages during period of record, owing to construction of levees.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 210 ft³/s (5.95 m³/s) Mar. 19, from estimate of flow under ice, gage height, 3.65 ft (3.955 m), backwater from ice; no peak above base of 3,000 ft³/s (85.0 m³/s); no flow July 7 - Aug. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	12	20	.50	4.0	145	15	1.6	.92	.00	15
2	11	18	12	20	.50	4.0	146	15	2.3	.82	.00	13
3	11	19	12	18	.50	4.0	122	15	4.6	.72	.00	14
4	10	24	14	18	1.0	4.0	115	11	3.4	.33	.00	10
5	10	25	16	16	1.5	3.5	104	13	5.1	.19	.00	8.7
6	9.2	24	18	16	2.0	3.0	99	12	48	.26	.00	6.4
7	9.2	22	18	10	2.0	2.5	91	11	91	.00	.00	5.8
8	11	32	16	8.0	1.5	2.5	80	7.6	96	.00	.00	3.3
9	12	54	20	6.0	1.0	3.0	71	5.1	46	.00	.00	2.3
10	11	52	25	5.0	.50	5.0	65	4.2	37	.00	.00	2.8
11	27	39	25	4.0	.50	7.0	54	3.8	18	.00	.00	2.9
12	56	37	22	3.0	.50	10	43	3.2	10	.00	.00	2.8
13	56	45	22	2.5	.50	20	40	2.9	7.1	.00	.00	2.8
14	56	39	20	2.0	.50	50	38	2.7	6.0	.00	.00	3.1
15	63	50	20	1.5	.50	90	34	2.5	69	.00	.00	3.4
16	67	43	18	1.3	.50	140	40	2.5	37	.00	61	3.1
17	67	41	18	1.5	.50	190	48	2.3	22	.00	67	4.6
18	72	45	20	2.0	1.0	200	49	2.3	29	.00	37	4.6
19	41	39	22	2.5	2.0	210	33	2.3	15	.00	33	5.9
20	27	43	25	2.5	3.0	205	29	2.2	19	.00	21	4.4
21	30	60	25	2.5	3.5	200	27	2.0	11	.00	10	6.0
22	30	50	25	2.5	3.5	190	22	1.6	8.5	.00	5.5	5.1
23	32	39	25	2.5	3.5	185	20	1.4	14	.00	4.6	4.2
24	33	43	22	3.0	3.5	180	19	.92	12	.00	3.8	4.0
25	29	39	22	3.0	3.5	175	15	.72	7.1	.00	2.7	3.7
26	21	35	22	2.5	3.5	170	14	.56	4.2	.00	5.1	3.9
27	18	30	22	2.0	4.0	165	16	.33	2.9	.00	4.2	3.7
28	18	25	22	1.5	4.5	160	16	.40	2.2	.00	2.9	3.7
29	18	20	22	1.0	4.5	155	15	.48	1.5	.00	14	3.5
30	16	15	22	.50	---	150	14	1.1	1.1	.00	15	3.3
31	16	---	20	.50	---	150	---	2.0	---	.00	21	---
TOTAL	899.4	1059	624	181.30	54.50	3037.5	1624	147.11	631.6	3.24	307.80	160.0
MEAN	29.0	35.3	20.1	5.85	1.88	98.0	54.1	4.75	21.1	.10	9.93	5.33
MAX	72	60	25	20	4.5	210	146	15	96	.92	67	15
MIN	9.2	12	12	.50	.50	2.5	14	.33	1.1	.00	.00	2.3
AC-FT	1780	2100	1240	360	108	6020	3220	292	1250	6.4	611	317

CAL YR 1979 TOTAL 107555.80 MEAN 295 MAX 3930 MIN .80 AC-FT 213300
WTR YR 1980 TOTAL 8729.45 MEAN 23.9 MAX 210 MIN .00 AC-FT 17310

06335750 DEEP CREEK NEAR AMIDON, ND

LOCATION.--Lat 46°34'37", long 103°33'26", in SE¼SW¼NE¼ sec.24, T.136 N., R.103 W., Slope County, Hydrologic Unit 10110203, on left bank 100 ft (30 m) downstream from county bridge, 3.0 mi (4.8 km) above mouth, and 13 mi (21 km) northwest of Amidon.

DRAINAGE AREA.--250 mi² (648 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,450 ft (747 m), from topographic map. Prior to Oct. 1, 1979 at datum 10.00 ft (3.05 m) lower.

REMARKS.--Records good except those from December to May, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,680 ft³/s (45.6 m³/s) Mar. 27, 1978, gage height, 8.28 ft (2.524 m); maximum gage height, 8.37 ft (2.551 m) Mar. 26, 1978; no flow for part of each day Sept. 11, 1978; Sept. 28, 1979, and Feb. 2-22, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge about 25 ft³/s (0.71 m³/s) Apr. 5, backwater from ice, no peak above base of 150 ft³/s (4.25 m³/s); maximum gage height, 13.32 ft (4.060 m) Mar. 31, backwater from ice; no flow Feb. 2-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.35	.95	1.1	.01	.17	16	.90	.23	.11	.04	.07
2	.14	.35	1.0	1.2	.00	.20	15	.84	.20	.12	.04	.07
3	.13	.35	1.1	1.1	.00	.14	15	.78	.16	.12	.03	.06
4	.13	.43	1.2	.98	.00	.10	17	.72	.14	.10	.04	.05
5	.13	.47	1.4	.90	.00	.08	20	.84	.18	.09	.04	.05
6	.13	.47	1.6	.80	.00	.11	18	.78	.14	.08	.03	.05
7	.13	.52	1.4	.38	.00	.14	16	.72	.14	.07	.03	.05
8	.14	.67	1.3	.25	.00	.17	13	.66	.13	.07	.04	.04
9	.10	.78	1.4	.25	.00	.20	11	.66	.11	.08	.04	.04
10	.10	.78	1.4	.30	.00	.23	9.2	.72	.10	.07	.04	.04
11	.10	.90	1.3	.35	.00	.26	8.0	.56	.10	.07	.04	.06
12	.10	.97	1.2	.40	.00	.50	7.2	.56	.32	.06	.04	.07
13	.10	.97	1.1	.38	.00	1.1	6.4	.56	2.8	.06	.04	.05
14	.10	1.1	1.0	.34	.00	2.0	5.6	.56	2.1	.06	.04	.05
15	.11	1.2	.90	.31	.00	2.7	5.0	.56	1.1	.06	.05	.05
16	.11	1.4	.80	.29	.00	2.9	4.3	.56	.66	.06	.14	.05
17	.10	1.6	.74	.27	.00	3.0	3.9	.56	.46	.06	.07	.05
18	.10	1.6	.80	.25	.00	3.3	3.2	.52	.34	.07	.05	.05
19	.14	1.5	.90	.24	.00	3.8	2.8	.47	.30	.07	.05	.05
20	.16	1.5	1.0	.23	.00	4.6	2.4	.43	.36	.07	.08	.05
21	.18	1.3	1.1	.23	.00	5.0	2.0	.39	.28	.05	.08	.05
22	.18	1.2	.95	.23	.00	5.7	1.8	.47	.28	.05	.08	.06
23	.20	1.1	.87	.23	.01	6.4	1.6	.47	.20	.05	.07	.05
24	.23	1.1	.74	.19	.03	7.2	1.5	.39	.18	.04	.07	.06
25	.23	1.0	.70	.10	.04	8.0	1.5	.32	.20	.04	.07	.05
26	.25	.98	.75	.06	.06	9.0	1.4	.25	.15	.04	.07	.05
27	.28	.96	.80	.05	.09	9.7	1.4	.25	.14	.04	.05	.05
28	.32	.93	.87	.04	.13	10	1.4	.23	.12	.04	.06	.05
29	.35	.90	.92	.03	.15	12	1.2	.20	.13	.04	.10	.06
30	.35	.92	.98	.02	---	15	.97	.18	.12	.04	.06	.05
31	.35	---	1.0	.01	---	17	---	.20	---	.03	.11	---
TOTAL	5.31	28.30	32.17	11.51	.52	130.70	213.77	16.31	11.87	2.01	1.79	1.58
MEAN	.17	.94	1.04	.37	.018	4.22	7.13	.53	.40	.065	.058	.053
MAX	.35	1.6	1.6	1.2	.15	17	20	.90	2.8	.12	.14	.07
MIN	.10	.35	.70	.01	.00	.08	.97	.18	.10	.03	.03	.04
AC-FT	11	56	64	23	1.0	259	424	32	24	4.0	3.6	3.1

CAL YR 1979 TOTAL 4656.20 MEAN 12.8 MAX 218 MIN .10 AC-FT 9240
WTR YR 1980 TOTAL 455.84 MEAN 1.25 MAX 20 MIN .00 AC-FT 904

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE, WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)
OCT												
04...	0915	.13	4050	8.5	8.0	7.5	11.1	101	K20	330	770	210
NOV												
09...	0945	.73	4350	8.3	-2.5	.5	12.8	98	210	180	810	230
DEC												
07...	0930	1.4	4400	8.4	-5.0	.0	12.4	93	K9	370	720	46
JAN												
11...	1045	.35	4570	7.9	-20.5	.0	8.2	62	K2	K21	810	110
MAR												
18...	1320	3.3	5000	8.7	11.0	.0	11.2	85	48	380	820	41
APR												
24...	1630	1.5	3380	8.3	25.0	18.0	9.6	109	K15	68	700	230
MAY												
19...	1400	.47	4000	8.2	28.0	19.5	9.4	112	97	110	770	190
JUN												
16...	1510	.69	3790	8.6	26.0	23.5	14.8	187	110	140	660	200
JUL												
16...	1430	.06	3630	8.3	32.0	27.0	15.3	204	--	90	630	100
AUG												
05...	1220	.04	3380	8.6	27.0	23.0	17.9	729	54	66	570	77
20...	1650	.10	--	--	22.5	20.0	--	--	--	--	--	--
SEP												
02...	1345	.07	3200	8.5	26.0	23.5	16.0	208	<2	K17	530	72

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT												
04...	110	120	800	69	13	16	654	17	564	3.5	1900	2.0
NOV												
09...	110	130	820	68	13	19	705	0	578	5.7	2000	9.8
DEC												
07...	73	130	860	90	14	16	808	7	674	5.2	1800	24
JAN												
11...	110	130	800	86	12	14	849	0	696	17	1900	13
MAR												
18...	98	140	980	72	18	18	866	41	778	3.0	2100	12
APR												
24...	100	110	590	64	9.7	11	571	0	468	4.6	1500	8.8
MAY												
19...	109	120	760	68	14	16	702	0	575	7.1	1700	9.0
JUN												
16...	83	110	788	69	12	14	512	22	456	2.2	1600	7.3
JUL												
16...	69	110	640	68	13	15	642	0	530	5.1	1500	9.8
AUG												
05...	66	98	670	71	12	17	556	22	492	2.4	1400	10
20...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	67	87	600	71	11	14	534	12	458	2.8	1200	4.9

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
04...	.5	12	3240	3300	4.41	1.14	.02	--	.04	.05	.40	.44
NOV												
09...	.4	8.9	3480	3450	4.73	6.86	.01	.06	.02	.02	.72	.74
DEC												
07...	.5	6.6	3420	3320	4.65	12.9	.03	.07	.02	.02	.98	1.0
JAN												
11...	.5	16	3360	3400	4.57	3.18	.05	.05	.04	.05	.81	.85
MAR												
18...	.4	11	4020	3830	5.47	35.8	.00	.00	.00	.00	1.1	1.1
APR												
24...	.4	4.6	2610	2610	3.55	10.6	.12	.07	.01	.01	1.2	1.2
MAY												
19...	.4	7.0	3160	3070	4.30	4.01	.02	.06	.07	.08	.57	.64
JUN												
16...	.5	5.1	2930	2800	3.98	5.46	.03	.03	.03	.04	.95	.98
JUL												
16...	.6	4.9	2810	2670	3.82	.46	.04	.21	.04	.05	--	--
AUG												
05...	.8	6.9	2580	2570	3.51	.28	.00	.01	.03	.04	.66	.69
20...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	.8	5.8	2270	2260	3.09	.43	.00	.00	.03	.04	.69	.72

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)
OCT											
04...	.46	2.0	.020	.06	.000	--	--	--	--	--	--
NOV											
09...	.75	3.3	.010	.03	.010	--	--	--	--	--	--
DEC											
07...	1.0	4.6	.010	.03	.000	--	--	--	--	--	--
JAN											
11...	.90	4.0	.030	.09	.010	--	--	--	--	--	--
MAR											
18...	1.1	4.9	.070	.21	.010	10	2	0	6	100	70
APR											
24...	1.3	5.8	.030	.09	.010	--	--	--	--	--	--
MAY											
19...	.66	2.9	.020	.06	.010	10	--	--	--	--	--
JUN											
16...	1.0	4.5	.020	.06	.010	--	--	--	--	--	--
JUL											
16...	--	--	--	--	.020	0	5	1	59	0	0
AUG											
05...	.69	3.1	.020	.06	.040	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
02...	.72	3.2	.020	.06	.010	--	--	--	--	--	--

DATE	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, SUSPENDED RECOV. (UG/L AS BE) (01011)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)
OCT											
04...	--	--	--	--	--	--	1700	--	--	--	--
NOV											
09...	--	--	--	--	--	--	1700	--	--	--	--
DEC											
07...	--	--	--	--	--	--	1400	--	--	--	--
JAN											
11...	--	--	--	--	--	--	1400	--	--	--	--
MAR											
18...	30	70	0	0	<3	1	1600	0	0	0	5
APR											
24...	--	--	--	--	--	--	1200	--	--	--	--
MAY											
19...	30	--	--	--	<3	--	1500	--	--	0	--
JUN											
16...	--	--	--	--	--	--	1100	--	--	--	--
JUL											
16...	8	6400	0	--	<1	1	1500	10	0	10	6
AUG											
05...	--	--	--	--	--	--	1400	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
02...	--	--	--	--	--	--	1100	--	--	--	--

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, SUS- PENDED RECOV- ERABLE (UG/L AS CO) (01036)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU) (01041)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM SUS- PENDED RECOV- ERABLE (UG/L AS LI) (01131)
OCT 04...	--	--	--	--	--	--	--	--	30	--	--
NOV 09...	--	--	--	--	--	--	--	--	30	--	--
DEC 07...	--	--	--	--	--	--	--	--	20	--	--
JAN 11...	--	--	--	--	--	--	--	--	30	--	--
MAR 18...	3	0	<8	0	9	0	25	8	40	90	0
APR 24...	--	--	--	--	--	--	--	--	30	--	--
MAY 19...	--	--	<8	--	--	--	<25	--	180	--	--
JUN 16...	--	--	--	--	--	--	--	--	30	--	--
JUL 16...	3	--	<3	10	11	--	<10	10	<10	80	50
AUG 05...	--	--	--	--	--	--	21	--	40	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP 02...	--	--	--	--	--	--	28	--	--	--	--

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, SUS- PENDED RECOV. (UG/L AS MN) (01054)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY SUS- PENDED RECOV- ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG) (71921)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, SUS- PENDED RECOV. (UG/L AS MO) (01061)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)
MAR 18...	100	130	10	120	.4	.5	.0	.04	5	0	<25
APR 24...	--	--	--	--	--	--	--	--	--	--	--
MAY 19...	82	--	--	110	--	.0	--	--	--	--	<25
JUN 16...	--	--	--	--	--	--	--	--	--	--	--
JUL 16...	26	40	40	5	.0	.0	.0	.03	6	--	<10
AUG 05...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP 02...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, SUS- PENDED RECOV- ERABLE (UG/L AS NI) (01066)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, SUS- PENDED TOTAL (UG/L AS SE) (01146)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) (01148)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
MAR 18...	2	3	3	0	10	1	1	0	0	1500	<8.0
APR 24...	--	--	--	--	--	--	--	--	--	--	--
MAY 19...	--	--	--	0	--	--	--	0	--	1600	<8.0
JUN 16...	--	--	--	--	--	--	--	--	--	--	--
JUL 16...	1	5	0	8	17	0	0	0	1	430	<3.0
AUG 05...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP 02...	--	--	--	--	--	--	--	--	--	--	--

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
MAR							
18...	20	7	13	25	<62	1.1	<29
APR							
24...	--	--	--	--	--	--	--
MAY							
19...	--	--	<8	--	--	--	--
JUN							
16...	--	--	--	--	--	--	--
JUL							
16...	20	--	<3	28	<45	<.4	<21

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT							
04...	--	--	--	24	.5	114	.04
NOV							
09...	--	--	--	23	.2	74	.15
DEC							
07...	--	--	--	33	.3	24	.09
JAN							
11...	--	--	--	19	--	92	.09
MAR							
18...	2.2	<29	2.2	21	.5	116	1.0
APR							
24...	--	--	--	26	.1	77	.31
MAY							
19...	--	--	--	22	.4	30	.04
JUN							
16...	--	--	--	29	.2	38	.07
JUL							
16...	.5	<20	.5	18	.2	23	.00
AUG							
05...	--	--	--	14	.7	13	.00
20...	--	--	--	--	--	29	.01
SEP							
02...	--	--	--	13	.2	11	.00

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
MAR											
18...	28	51	72	78	83	88	94	97	100	--	--
JUL											
16...	3	4	10	15	24	32	46	62	77	94	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
OCT					
04...	20	.100	.000	.950	1.10
NOV					
09...	36	2.09	.240	15.0	15.8
JUL					
16...	30	1.64	.410	1.58	1.97
AUG					
05...	20	2.91	.780	2.91	5.20
SEP					
02...	28	3.07	.770	15.5	19.3

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 4,79		NOV 9,79		DEC 7,79		JAN 11,80		MAR 18,80		APR 24,80	
TIME	0915		0945		0930		1045		1320		1630	
TOTAL CELLS/ML	750		890		370		2800		21000		760	
DIVERSITY: DIVISION	1.1		0.2		0.5		0.7		0.2		1.9	
.CLASS	1.1		0.3		1.0		0.7		0.2		1.9	
..ORDER	1.1		0.4		1.1		0.7		0.2		2.5	
...FAMILY	1.4		0.4		1.1		1.1		0.2		3.1	
....GENUS	1.4		1.3		1.1		1.1		0.3		3.3	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	27	1	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	46	6	29	3	14	4	--	-	*	0	77	10
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	13	2
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	26	3
...SCENEDESMACEAE												
....SCENEDESMUS	--	-	--	-	--	-	--	-	--	-	130#	17
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	--	-	26	3
..ZYGNEMATALES												
...ZYGNEMATACEAE												
....SPIROGYRA	--	-	--	-	--	-	--	-	--	-	39	5
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	590#	66	14	4	--	-	*	0	39	5
....MELOSIRA	--	-	240#	27	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	27	1	--	-	--	-
....RHOPALODIA	5	1	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	190	7	*	0	13	2
...FRAGILARIACEAE												
....SYNEDRA	5	1	--	-	29	8	81	3	130	1	39	5
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....ENTOMONEIS	--	-	--	-	--	-	--	-	--	-	13	2
....MASTOGLOIA	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	81	11	--	-	--	-	54	2	*	0	--	-
...NITZSCHIACEAE												
....NITZSCHIA	96	13	14	2	--	-	110	4	*	0	26	3
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	27	1	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	14	2	300#	81	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-	13	2
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	520#	69	--	-	--	-	--	-	21000#	96	--	-
....SPIRULINA	--	-	--	-	14	4	--	-	400	2	--	-
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	--	-	180#	24

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ..

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	OCT 4,79 0915		NOV 9,79 0945		DEC 7,79 0930		JAN 11,80 1045		MAR 18,80 1320		APR 24,80 1630	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	13	2
....TRACHELOMONAS	--	-	--	-	--	-	2300#	82	130	1	120#	15
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAY 19,80	JUN 16,80	JUL 16,80	AUG 5,80	SEP 2,80
TIME	1400	1510	1430	1220	1345
TOTAL CELLS/ML	270	64	100	9000	710
DIVERSITY: DIVISION	1.9	1.4	2.2	0.3	1.1
.CLASS	1.9	1.4	2.2	0.3	1.1
..ORDER	2.2	1.9	2.2	0.8	1.8
...FAMILY	2.6	1.9	2.2	0.8	2.0
....GENUS	2.7	1.9	2.2	0.8	2.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	13	5	--	-	--	-	--	-	--	-
....CHLORELLA	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	26	10	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	26#	40	--	-	--	-	--	-
...SCENEDESMACEAE										
....SCENEDESMUS	26	10	--	-	--	-	100	1	51	7
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	13#	20	13	13	*	0	13	2
..ZYGNEMATALES										
...ZYGNEMATACEAE										
....SPIROGYRA	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	64#	24	--	-	26#	25	120	1	77	11
....MELOSIRA	--	-	--	-	--	-	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	--	-	--	-	*	0	--	-
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	--	-	--	-	--	-
....RHOPALODIA	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	13	2
...NAVICULACEAE										
....ENTOMONEIS	--	-	--	-	--	-	--	-	--	-
....MASTOGLOIA	--	-	--	-	--	-	*	0	--	-
....NAVICULA	26	10	13#	20	--	-	--	-	13	2
...NITZSCHIACEAE										
....NITZSCHIA	13	5	--	-	--	-	*	0	39	5
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...CHROMULINACEAE										
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	39#	38	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	--	-	--	-	--	-	--	-	77	11
....ANACYSTIS	77#	29	13#	20	--	-	7800#	86	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	--	-	420#	60
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	--	-	970	11	--	-
....SPIRULINA	--	-	--	-	--	-	--	-	--	-
...RIVULARIACEAE										
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
      * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06335750 DEEP CREEK NEAR AMIDON, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	MAY 19,80 1400		JUN 16,80 1510		JUL 16,80 1430		AUG 5,80 1220		SEP 2,80 1345	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	13	13	*	0	--	-
....TRACHELOMONAS	26	10	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	13	13	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06336447 DUCK CREEK NEAR WIBAUX, MT

LOCATION.--Lat 46°52'30", long 104°09'18", in SW¼SW¼SW¼ sec.17, T.13 N., R.60 E., Wibaux County, Hydrologic Unit 10110204, on right bank, and 9.5 (15.3 km) southeast of Wibaux.

DRAINAGE AREA.--46.5 mi² (120.4 km²).

PERIOD OF RECORD.--March 1978 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records fair. Some regulation due to stock dams upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 580 ft³/s (16.4 m³/s) Mar. 21, 1978, gage height undetermined; maximum recorded gage height, 4.14 ft (1.262 m) Apr. 18, 1979, backwater from Beaver Creek; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 0.02 ft³/s (0.001 m³/s) Mar. 20, gage height, 1.15 ft (0.350 m); no peak above base of 20 ft³/s (0.57 m³/s); no flow most of the year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.003	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.2	.00	.00	.00	.00	.00	.00

CAL YR 1979 TOTAL 715.89 MEAN 1.96 MAX 125 MIN .00 AC-FT 1420
WTR YR 1980 TOTAL 0.09 MEAN .000 MAX .01 MIN .00 AC-FT .20

06336500 BEAVER CREEK AT WIBAUX, MT

LOCATION.--Lat 46°59'24", long 104°11'00", in NE¼NE¼ sec.12, T.14 N., R.59 E., Wibaux County, Hydrologic Unit 10110204, on left bank 20 ft (6.1 m) upstream from bridge on old U.S. Highway 10, at Wibaux, 12 mi (19 km) upstream from Little Beaver Creek, and at mile 62.5 (100.6 km).

DRAINAGE AREA.--351 mi² (909 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1938 to June 1969, October 1978 to current year.

REVISED RECORDS.--WSP 1309: 1943, 1947-48. WSP 1509: 1942(M), 1944-45, 1946(M).

GAGE.--Water-stage recorder. Altitude of gage is 2,650 ft (808 m), by barometer. Prior to Sept. 21, 1940, nonrecording gages at site about 500 ft (152 m) upstream at different datums.

REMARKS.--Water-discharge records good except those below 1 ft³/s (0.028 m³/s) and those for winter period, which are poor. Several known diversions for irrigation above station.

AVERAGE DISCHARGE.--32 years (1938-68, 1979-80), 22.0 ft³/s (0.623 m³/s), 15,940 acre-ft/yr (19.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,780 ft³/s (107 m³/s) Mar. 21, 1939, gage height, 10.8 ft (3.29 m), site and datum then in use; maximum gage height observed, 13.44 ft (4.097 m) Mar. 24, 1943, ice jam; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 7, 1929, reached a discharge of about 30,000 ft³/s (850 m³/s), from the average of three independent indirect measurements made at different sites. Flood in 1872 reported similar in magnitude. Flood in June 1921 reached a stage of about 8.6 ft (2.62 m) lower than 1929 (discharge about 10,000 ft³/s (283 m³/s), estimated on basis of cross-section and information from local residents).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19 ft³/s (0.54 m³/s) Mar. 17, ice jam; maximum gage height, 7.77 ft (2.368 m) Jan. 31, backwater from ice; no flow on several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.96	3.9	3.1	2.2	2.9	8.0	13	4.2	.36	.14	.00	.02
2	.96	4.0	3.1	1.9	3.1	9.2	11	4.2	.36	.20	.00	.02
3	.78	4.2	3.1	1.9	3.4	8.2	9.6	2.8	.28	.28	.00	.00
4	.78	4.0	3.1	1.9	3.7	7.5	9.0	10	.14	.28	.00	.00
5	.78	5.0	3.1	1.8	3.9	7.0	9.6	4.6	.09	.28	.00	.00
6	.68	4.0	3.5	1.7	4.0	6.2	11	4.2	.05	.28	.00	.00
7	.78	5.0	3.1	1.6	3.9	7.1	10	4.2	.05	.28	.00	.00
8	.78	5.0	2.8	1.5	3.7	7.6	9.6	3.5	.05	.28	.00	.00
9	.96	4.6	2.8	1.4	3.6	8.0	8.4	3.5	.07	.28	.00	.00
10	1.2	4.0	2.7	1.3	3.6	7.4	7.9	2.2	.09	.28	.00	.00
11	1.2	4.0	2.8	1.3	3.5	8.3	7.4	.96	.05	.20	.00	.00
12	1.2	5.0	2.8	1.3	3.4	9.5	7.9	.96	.09	.20	.00	.00
13	1.2	5.0	2.8	1.4	3.4	11	7.9	.78	.09	.14	.00	.00
14	1.0	5.9	3.1	1.5	3.4	13	6.4	.78	.14	.20	.00	.00
15	1.0	5.9	2.8	1.6	3.5	15	6.4	.96	.20	.14	.02	.00
16	1.4	4.0	2.6	1.7	3.7	17	6.4	.96	.20	.20	.09	.00
17	.96	4.2	3.0	1.8	4.3	19	5.9	.78	.20	.28	.02	.00
18	.78	3.5	3.5	1.7	4.8	18	5.5	.78	.20	.28	.02	.00
19	1.2	4.2	3.1	1.7	5.4	17	5.5	.60	.20	.28	.02	.00
20	1.4	4.2	3.1	1.6	5.2	16	4.6	.78	.28	.20	.02	.00
21	1.8	3.9	3.1	1.7	5.0	14	5.0	.78	.28	.14	.02	.00
22	2.5	3.9	2.8	2.1	4.8	14	5.0	.60	.20	.09	.02	.00
23	2.5	3.9	2.5	2.8	4.6	15	3.9	.78	.20	.09	.02	.05
24	2.5	3.9	2.5	3.0	4.4	14	4.2	.96	.28	.00	.00	.14
25	1.8	3.5	2.5	3.0	4.4	13	4.2	.70	.28	.00	.00	.46
26	2.8	3.9	2.5	2.8	6.5	12	4.2	.46	.20	.00	.02	.46
27	2.8	3.1	2.5	2.7	7.9	11	3.5	.46	.20	.00	.05	.78
28	2.8	2.8	2.5	2.5	8.9	11	3.5	.36	.28	.00	.09	1.2
29	3.5	2.8	2.5	2.4	8.2	11	3.9	.28	.14	.00	.05	1.2
30	3.5	2.8	2.2	2.3	---	12	3.9	.46	.14	.00	.05	.96
31	3.9	---	2.2	2.6	---	13	---	.36	---	.00	.05	---
TOTAL	50.58	127.7	87.8	60.7	131.1	360.0	204.3	57.94	5.39	5.02	.56	5.29
MEAN	1.63	4.26	2.83	1.96	4.52	11.6	6.81	1.87	.18	.16	.018	.18
MAX	3.9	5.9	3.5	3.0	8.9	19	13	10	.36	.28	.09	1.2
MIN	.68	2.8	2.2	1.3	2.9	6.2	3.5	.28	.05	.00	.00	.00
AC-FT	100	253	174	120	260	714	405	115	11	10.0	1.1	10

CAL YR 1979 TOTAL 11131.40 MEAN 30.5 MAX 1040 MIN .20 AC-FT 22080
WTR YR 1980 TOTAL 1096.32 MEAN 3.00 MAX 19 MIN .00 AC-FT 2170

06336500 BEAVER CREEK AT WIBAUX, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	WEATHER (WMO CODE NUMBER) (00041)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT												
17...	1300	.72	2560	8.1	15.0	10.5	0	8.9	88	740	330	130
NOV												
28...	1200	2.8	3040	8.1	-7.0	.0	3	11.2	82	780	340	130
DEC												
18...	1230	3.6	2920	8.0	11.0	.0	0	11.6	87	780	280	130
JAN												
24...	0930	3.7	3250	7.9	4.0	.5	60	11.4	88	840	330	140
FEB												
28...	1430	9.0	1750	8.1	-5.0	.0	1	11.2	74	430	160	80
MAR												
20...	1200	16	1570	8.0	2.0	.0	1	11.0	82	400	160	76
APR												
16...	1030	6.2	1850	8.0	14.0	9.5	0	8.9	98	470	200	84
MAY												
21...	1700	.58	2680	8.3	35.0	24.5	0	11.1	146	600	280	120
JUN												
24...	1300	.31	2550	8.1	24.0	23.0	0	7.2	91	690	230	120
JUL												
24...	1400	.02	2480	8.2	30.0	25.0	0	8.3	104	710	300	120
AUG												
26...	1300	E.02	2530	8.0	12.0	16.5	52	6.0	67	740	310	130
SEP												
23...	0930	.01	2500	7.8	10.0	10.0	0	5.2	50	740	310	130

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	IODIDE, DIS-SOLVED (MG/L AS I) (71865)
OCT												
17...	100	350	50	5.6	360	12	410	1000	9.4	.3	--	--
NOV												
28...	110	420	54	6.6	430	11	440	1200	9.5	.3	--	--
DEC												
18...	110	420	54	6.6	430	11	500	1100	9.2	.3	.1	.00
JAN												
24...	120	490	55	7.3	500	9.6	510	1300	22	.3	--	--
FEB												
28...	56	230	53	4.0	240	12	270	650	6.2	.2	--	--
MAR												
20...	51	180	49	3.9	--	11	240	530	6.4	.1	.1	.00
APR												
16...	62	220	50	4.4	--	7.7	270	670	5.5	.2	--	--
MAY												
21...	92	330	51	5.5	--	11	400	880	12	.3	--	--
JUN												
24...	95	320	50	5.3	--	11	460	940	12	.3	.3	.00
JUL												
24...	100	340	51	5.5	--	1.2	410	950	14	.3	.0	.00
AUG												
26...	100	330	49	5.3	--	12	400	940	17	.2	--	--
SEP												
23...	100	330	49	5.3	--	8.2	390	960	17	.3	.0	.00

E - Estimated.

06336500 BEAVER CREEK AT WIBAUX, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
OCT 17...	11	1860	2.53	3.62	.01	.01	2.6	2.6	2.6	.01	12	.010
NOV 28...	9.9	2160	2.94	16.3	.01	.02	1.6	1.6	1.6	.02	7.1	.010
DEC 18...	11	2090	2.84	20.3	.05	.01	.47	.48	.53	.01	2.3	.010
JAN 24...	10	2400	3.26	2[illegible]	.09	.01	.42	.43	.52	.01	2.3	.020
FEB 28...	7.6	1200	1.63	29.2	.47	.14	1.9	2.0	2.5	.17	11	.370
MAR 20...	6.8	1010	1.37	43.6	.14	.18	1.1	1.3	1.4	.22	6.4	.080
APR 16...	3.1	1220	1.66	20.4	.01	.00	.73	.73	.74	.00	3.3	.040
MAY 21...	8.8	1700	2.31	2.66	.02	.01	.67	.68	.70	.01	3.1	.090
JUN 24...	11	1790	2.43	1.50	.00	.05	.79	.84	.84	.06	3.7	.080
JUL 24...	6.4	1780	2.42	.10	.00	.01	.96	.97	.97	.01	4.3	.060
AUG 26...	7.3	1800	2.45	.10	.30	.02	.85	.87	1.2	.02	5.2	.070
SEP 23...	11	1820	2.48	.05	.00	.01	.57	.58	.58	.01	2.6	.050

DATE	PHOS- PHORUS, TOTAL (MG/L AS PO4) (71886)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, SUS- PENDED RECOV. (UG/L AS BE) (01011)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM SUS- PENDED RECOV- ERABLE (UG/L AS CD) (01026)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)
OCT 17...	.03	--	--	--	--	--	--	730	--	--	--	--
NOV 28...	.03	--	--	--	--	--	--	780	--	--	--	--
DEC 18...	.03	--	--	--	--	--	--	1500	--	--	--	--
JAN 24...	.06	--	--	--	--	--	--	820	--	--	--	--
FEB 28...	1.1	--	--	--	--	--	--	460	--	--	--	--
MAR 20...	.25	--	--	--	--	--	--	480	--	--	--	--
APR 16...	.12	--	--	--	--	--	--	450	--	--	--	--
MAY 21...	.28	--	--	--	--	--	--	680	--	--	--	--
JUN 24...	.25	--	--	--	--	--	--	740	--	--	--	--
JUL 24...	.18	3	1	2	0	0	0	780	0	0	0	10
AUG 26...	.21	--	--	--	--	--	--	790	--	--	--	--
SEP 23...	.15	--	--	--	--	--	--	680	--	--	--	--

06336500 BEAVER CREEK AT WIBAUX, MT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT 17...	--	--	--	--	--	--	--	10	--	--	--	--
NOV 28...	--	--	--	--	--	--	--	10	--	--	--	--
DEC 18...	--	--	--	--	--	--	--	20	--	--	--	--
JAN 24...	--	--	--	--	--	--	--	0	--	--	--	--
FEB 28...	--	--	--	--	--	--	--	70	--	--	--	--
MAR 20...	--	--	--	--	--	--	--	130	--	--	--	--
APR 16...	--	--	--	--	--	--	--	70	--	--	--	--
MAY 21...	--	--	--	--	--	--	--	30	--	--	--	--
JUN 24...	--	--	--	--	--	--	--	20	--	--	--	--
JUL 24...	10	0	5	3	2	300	260	40	6	6	0	300
AUG 26...	--	--	--	--	--	--	--	80	--	--	--	--
SEP 23...	--	--	--	--	--	--	--	30	--	--	--	--

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
JUL 24...	170	130	.2	.1	.1	3	2	1	0	0	0
AUG 26...	--	--	--	--	--	--	--	--	--	--	--
SEP 23...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT 17...	--	--	--	--	--	13	.03
NOV 28...	--	--	--	--	--	81	.61
DEC 18...	--	--	--	18	.4	34	.33
JAN 24...	--	--	--	--	--	67	.67
FEB 28...	--	--	--	--	--	126	3.1
MAR 20...	--	--	--	24	.4	11	.48
APR 16...	--	--	--	--	--	71	1.2
MAY 21...	--	--	--	--	--	26	.04
JUN 24...	--	--	--	17	.2	90	.08
JUL 24...	20	10	10	10	.3	44	.00
AUG 26...	--	--	--	--	--	125	.01
SEP 23...	--	--	--	11	.6	41	.00

06336510 HAY CREEK NO. 2 NEAR WIBAUX, MT
(Formerly published as Upper Hay Creek Tributary near Wibaux, MT)

LOCATION.--Lat 46°59'31", long 104°06'12", in NW¼SW¼SE¼ sec.3, T.14 N., R.60 E., Wibaux County, Hydrologic Unit 10110204, on the right bank, and 4.0 mi (6.4 km) east of Wibaux.

DRAINAGE AREA.--4.1 mi² (10.6 km²).

PERIOD OF RECORD.--March 1978 to current year. Prior to October 1979, published as Upper Hay Creek Tributary near Wibaux, Mt.

GAGE.--Water-stage recorder.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 85 ft³/s (2.41 m³/s) Mar. 19, 1978, gage height undetermined; maximum recorded gage height, 6.66 ft (2.030 m) July 5, 1978; no flow most of the time.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 4.0 ft³/s (0.11 m³/s) Mar. 15, gage height, 7.06 ft (2.152 m), from floodmarks, backwater from ice, no peak above base of 5.0 ft³/s (0.14 m³/s); no flow most of the time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.75	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	1.90	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.061	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.75	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	3.8	.00	.00	.00	.00	.00	.00

CAL YR 1979 TOTAL 34.56 MEAN .095 MAX 6.0 MIN .00 AC-FT 69
WTR YR 1980 TOTAL 1.90 MEAN .005 MAX .75 MIN .00 AC-FT 3.8

06336515 HAY CREEK NEAR WIBAUX, MT
(Formerly published as Lower Hay Creek Tributary near Wibaux, MT)

LOCATION.--Lat 47°02'26", long 104°08'04", in NW¼SW¼SW¼ sec.21, T.15 N., R.60 E., Wibaux County, Hydrologic Unit 10110204, on left bank, and 5.5 mi (8.8 km) northeast of Wibaux.

DRAINAGE AREA.--11.4 mi² (29.5 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1978 to current year. Prior to October 1979, published as Lower Hay Creek Tributary near Wibaux, MT.

GAGE.--Water-stage recorder.

REMARKS.--Records fair. Some regulation due to stock dams upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58 ft³/s (1.64 m³/s) Apr. 9, 1979, gage height, 2.04 ft (0.622 m); maximum gage height, 6.67 ft (2.033 m) Mar. 19, 1978, backwater from ice; no flow for several months most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.60 ft³/s (0.02 m³/s) Mar. 18, gage height, 2.27 ft (0.692 m), backwater from ice, no peak above base of 10 ft³/s 0.28 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.01	.01	.01	.00	.00	.09	.03	.02	.00	.00	.00
2	.01	.01	.01	.00	.00	.00	.08	.03	.02	.01	.00	.00
3	.01	.01	.01	.00	.00	.00	.08	.02	.01	.00	.00	.00
4	.01	.01	.01	.00	.00	.00	.08	.02	.01	.00	.00	.00
5	.01	.01	.01	.00	.00	.00	.08	.02	.01	.00	.00	.00
6	.01	.01	.01	.00	.00	.00	.07	.02	.01	.00	.00	.00
7	.01	.01	.01	.00	.00	.00	.07	.02	.01	.00	.00	.00
8	.01	.01	.01	.00	.00	.00	.07	.02	.01	.00	.00	.00
9	.01	.01	.01	.00	.00	.00	.06	.03	.01	.00	.00	.00
10	.01	.01	.01	.00	.00	.00	.06	.03	.01	.00	.00	.00
11	.01	.01	.01	.00	.00	.02	.06	.03	.01	.00	.00	.00
12	.01	.01	.01	.00	.00	.05	.06	.03	.01	.00	.00	.01
13	.01	.01	.01	.00	.00	.07	.06	.03	.02	.00	.00	.01
14	.01	.01	.01	.00	.00	.10	.07	.03	.01	.00	.00	.01
15	.01	.01	.01	.00	.00	.15	.08	.03	.01	.00	.00	.01
16	.01	.01	.01	.00	.00	.20	.08	.03	.01	.00	.04	.01
17	.01	.01	.01	.00	.00	.30	.09	.03	.01	.00	.01	.01
18	.01	.01	.01	.00	.00	.35	.11	.03	.01	.00	.00	.01
19	.01	.01	.01	.00	.00	.50	.09	.03	.01	.00	.00	.01
20	.01	.01	.01	.00	.00	.45	.08	.03	.01	.00	.00	.01
21	.01	.01	.01	.00	.00	.40	.08	.03	.01	.00	.00	.01
22	.01	.01	.01	.00	.00	.35	.06	.02	.01	.00	.00	.02
23	.01	.01	.01	.00	.00	.30	.06	.02	.01	.00	.00	.02
24	.01	.01	.01	.00	.00	.25	.05	.02	.01	.00	.00	.02
25	.01	.01	.01	.00	.00	.20	.04	.02	.00	.00	.00	.02
26	.01	.01	.01	.00	.00	.15	.04	.02	.00	.00	.00	.02
27	.01	.01	.01	.00	.00	.12	.03	.02	.00	.00	.00	.02
28	.01	.01	.01	.00	.00	.10	.03	.02	.00	.00	.01	.02
29	.01	.01	.01	.00	.00	.10	.03	.02	.00	.00	.01	.02
30	.01	.01	.01	.00	---	.10	.03	.02	.00	.00	.01	.02
31	.01	---	.01	.00	---	.10	---	.02	---	.00	.00	---
TOTAL	.31	.30	.31	.01	.00	4.36	1.97	.77	.27	.01	.08	.28
MEAN	.010	.010	.010	.000	.000	.14	.066	.025	.009	.000	.003	.009
MAX	.01	.01	.01	.01	.00	.50	.11	.03	.02	.01	.04	.02
MIN	.01	.01	.01	.00	.00	.00	.03	.02	.00	.00	.00	.00
AC-FT	.6	.6	.6	.02	.00	8.6	3.9	1.5	.5	.02	.2	.6

CAL YR 1979 TOTAL 267.00 MEAN .73 MAX 31 MIN .00 AC-FT 530
WTR YR 1980 TOTAL 8.67 MEAN .024 MAX .50 MIN .00 AC-FT 17

06336515 HAY CREEK NEAR WIBAUX, MT--Continued
(Formerly published as Lower Hay Creek Tributary near Wibaux, MT)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)
OCT										
02...	1430	.01	2350	--	16.0	--	--	--	--	--
NOV										
05...	1115	.01	2200	--	8.0	--	--	--	--	--
20...	1130	.01	2050	7.5	1.5	1000	610	170	150	130
DEC										
18...	1210	.01	2100	--	.5	--	--	--	--	--
MAR										
18...	1145	.28	1600	--	.0	--	--	--	--	--
19...	1130	.41	1600	--	.0	--	--	--	--	--
24...	1125	.25	2100	--	.5	--	--	--	--	--
28...	1215	.10	2050	6.8	1.0	1100	840	170	160	160
31...	1300	.10	2100	--	1.0	--	--	--	--	--
APR										
01...	1545	.09	2400	--	1.5	--	--	--	--	--
04...	1425	.08	1800	--	4.0	--	--	--	--	--
10...	1455	.05	1600	--	5.0	--	--	--	--	--
15...	1255	.07	2600	--	8.5	--	--	--	--	--
22...	1225	.06	2600	--	8.5	--	--	--	--	--
MAY										
08...	1350	.02	2300	--	12.0	--	--	--	--	--
JUN										
10...	1115	.01	E2620	6.3	19.5	1300	970	140	220	190
JUL										
07...	1335	.00	2500	--	25.0	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)
OCT										
02...	--	--	--	--	--	--	--	--	--	--
NOV										
05...	--	--	--	--	--	--	--	--	--	--
20...	39	1.8	10	430	850	30	.2	7.6	1610	2.19
DEC										
18...	--	--	--	--	--	--	--	--	--	--
MAR										
28...	24	2.1	10	250	1200	16	.1	8.6	1880	2.56
31...	--	--	--	--	--	--	--	--	--	--
MAY										
08...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	25	2.3	8.1	290	1300	21	.2	6.6	2060	2.80

DATE	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT									
02...	--	--	--	--	--	--	--	--	--
NOV									
05...	--	--	--	--	--	--	--	--	--
20...	.04	.71	410	160	220	0	1500	--	--
DEC									
18...	--	--	--	--	--	--	--	--	--
MAR									
18...	--	--	--	--	--	--	--	6	.00
19...	--	--	--	--	--	--	--	8	.01
24...	--	--	--	--	--	--	--	4	.00
28...	.51	1.4	500	320	370	0	1600	10	.00
31...	--	--	--	--	--	--	--	6	.00
APR									
01...	--	--	--	--	--	--	--	6	.00
04...	--	--	--	--	--	--	--	24	.01
10...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	81	.02
22...	--	--	--	--	--	--	--	--	--
MAY									
08...	--	--	--	--	--	--	--	--	--
JUN									
10...	.06	1.1	650	170	300	0	1300	--	--

E - Estimated.

06336545 LITTLE BEAVER CREEK NEAR WIBAUX, MT

LOCATION.--Lat 47°03'44", long 104°05'30", in NW¼NW¼NW¼ sec.14, T.15 N., R.60 W., Wibaux County, Hydrologic Unit 10110204, on the right bank 100 ft (30.5 m) upstream from county highway bridge, 9.5 mi (15.3 km) northeast of Wibaux.

DRAINAGE AREA.--96.2 mi² (249.2 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1978 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records good except those for winter periods, which are fair. Flow regulated by Odlands Dam, capacity 600 acre-ft (740 hm³) to the top of the spillway, 9.1 mi (14.6 km) upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,850 ft³/s (52.4 m³/s) Mar. 21, 1978, gage height, 10.14 ft (3.091 m), backwater from ice; no flow for some days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15 ft³/s (0.42 m³/s) Mar. 18, gage height, 3.17 ft (0.966 m); no flow July 17 - Aug. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.25	.17	.15	.17	.26	5.3	.28	.22	.06	.00	.06
2	.06	.22	.18	.14	.18	.25	3.1	.28	.18	.05	.00	.06
3	.09	.25	.18	.13	.19	.24	2.6	.27	.17	.05	.00	.07
4	.10	.22	.18	.13	.20	.24	1.9	.23	.15	.05	.00	.07
5	.07	.20	.17	.13	.20	.24	2.3	.19	.15	.05	.00	.07
6	.07	.26	.17	.13	.20	.24	2.4	.18	.15	.03	.00	.06
7	.07	.22	.17	.13	.20	.24	1.7	.17	.15	.02	.00	.06
8	.07	.22	.17	.13	.20	.25	1.7	.17	.15	.01	.00	.04
9	.13	.28	.18	.13	.20	.25	1.6	.17	.15	.01	.00	.03
10	.20	.28	.17	.13	.20	.25	1.5	.17	.15	.01	.00	.03
11	.20	.28	.16	.13	.20	.25	1.7	.17	.10	.01	.00	.03
12	.19	.23	.16	.14	.20	.75	.99	.17	.10	.01	.00	.05
13	.20	.18	.16	.15	.20	1.5	.93	.17	.10	.01	.00	.06
14	.20	.19	.16	.15	.20	3.0	.77	.17	.10	.01	.00	.06
15	.22	.20	.16	.16	.20	5.0	.66	.15	.10	.01	.00	.07
16	.22	.18	.16	.16	.20	6.0	.68	.17	.10	.01	1.5	.07
17	.23	.17	.17	.16	.21	8.0	.58	.17	.10	.00	.75	.08
18	.23	.16	.17	.16	.22	11	.52	.17	.10	.00	.30	.08
19	.23	.16	.16	.16	.22	8.0	.47	.17	.10	.00	.25	.09
20	.25	.16	.16	.16	.22	8.0	.52	.22	.10	.00	.20	.09
21	.23	.16	.16	.16	.22	8.5	.39	.17	.10	.00	.15	.10
22	.23	.16	.15	.16	.22	8.5	.35	.17	.10	.00	.12	.11
23	.23	.16	.15	.17	.22	10	.35	.15	.10	.00	.10	.10
24	.25	.16	.15	.17	.22	9.0	.31	.17	.10	.00	.09	.09
25	.27	.16	.15	.17	.22	8.0	.31	.17	.10	.00	.08	.09
26	.25	.16	.15	.17	.23	7.0	.31	.17	.10	.00	.06	.09
27	.25	.16	.15	.17	.25	7.5	.28	.17	.10	.00	.04	.10
28	.25	.16	.15	.17	.27	8.0	.27	.17	.10	.00	.05	.11
29	.25	.16	.15	.17	.27	7.0	.27	.22	.09	.00	.06	.11
30	.25	.16	.15	.17	---	6.0	.27	.22	.09	.00	.05	.11
31	.25	---	.15	.17	---	5.3	---	.23	---	.00	.05	---
TOTAL	5.80	5.91	5.02	4.71	6.13	138.76	35.05	5.85	3.60	.40	3.85	2.24
MEAN	.19	.20	.16	.15	.21	4.48	1.17	.19	.12	.013	.12	.075
MAX	.27	.28	.18	.17	.27	11	5.3	.28	.22	.06	1.5	.11
MIN	.06	.16	.15	.13	.17	.24	.27	.15	.09	.00	.00	.03
AC-FT	12	12	10.0	9.3	12	275	70	12	7.1	.8	7.6	4.4

CAL YR 1979 TOTAL 3474.40 MEAN 9.52 MAX 400 MIN .02 AC-FT 6890
WTR YR 1980 TOTAL 217.32 MEAN .59 MAX 11 MIN .00 AC-FT 431

06336545 LITTLE BEAVER CREEK NEAR WIBAUX, MT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)
OCT										
01...	1520	.06	1600	--	17.0	--	--	--	--	--
NOV										
13...	1520	1.8	3400	--	4.0	--	--	--	--	--
20...	1345	.16	3000	7.4	2.0	930	310	90	170	630
JAN										
03...	1155	.13	4900	--	.5	--	--	--	--	--
FEB										
04...	1215	.20	5000	--	1.0	--	--	--	--	--
MAR										
11...	1235	2.0	1700	--	.5	--	--	--	--	--
18...	1640	12	1150	--	.0	--	--	--	--	--
19...	1550	2.9	1100	--	.0	--	--	--	--	--
24...	1245	9.5	1250	--	.5	--	--	--	--	--
28...	1415	8.8	1600	7.5	1.0	500	270	84	71	190
31...	1410	5.6	1275	--	2.0	--	--	--	--	--
APR										
04...	1350	3.6	1600	--	4.0	--	--	--	--	--
10...	1335	1.5	1650	--	5.0	--	--	--	--	--
JUN										
10...	1005	.15	3500	7.8	19.0	760	470	55	150	540
JUL										
07...	1415	.02	3300	--	24.0	--	--	--	--	--
SEP										
02...	1230	.06	3400	--	20.0	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)
OCT										
01...	--	--	--	--	--	--	--	--	--	--
NOV										
13...	--	--	--	--	--	--	--	--	--	--
20...	85	9.0	18	620	1500	15	.3	4.6	2800	3.81
JAN										
03...	--	--	--	--	--	--	--	--	--	--
FEB										
04...	--	--	--	--	--	--	--	--	--	--
MAR										
28...	44	3.7	13	230	700	11	.2	6.4	1220	1.66
31...	--	--	--	--	--	--	--	--	--	--
APR										
04...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	61	8.6	10	290	1500	10	.3	.6	2440	3.32

DATE	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
NOV									
13...	--	--	--	--	--	--	--	--	--
20...	1.21	1.2	960	20	30	0	1200	--	--
JAN									
03...	--	--	--	--	--	--	--	--	--
FEB									
04...	--	--	--	--	--	--	--	--	--
MAR									
11...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	53	1.8
19...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
28...	29.0	1.8	420	230	310	<10	890	31	.74
31...	--	--	--	--	--	--	--	--	--
APR									
04...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
JUN									
10...	.99	1.2	1100	80	20	5	800	--	--

06336600 BEAVER CREEK NEAR TROTTERS, ND

LOCATION.--Lat 47°09'47", long 103°59'32", in SW¼SW¼NE¼ sec.33, T.143 N., R.105 W., Golden Valley County, Hydrologic Unit 10110204, on left bank 100 ft (30 m) upstream from bridge on county road, 2.4 mi (3.9 km) east of Montana-North Dakota State line, 13 mi (21 km) southwest of Trotters, 17 mi (27 km) north of Beach, 20 mi (32 km) upstream from Elk Creek, and 27 mi (43 km) above mouth.

DRAINAGE AREA.--485 mi^2 (1,260 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,370 ft (722 m), from topographic map.

REMARKS.--Records good except those for periods from November to March, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,720 ft^3/s (77.0 m^3/s) Mar. 29, 1978, gage height, 18.61 ft (5.672 m); maximum gage height, 19.27 ft (5.874 m) Mar. 22, 1978, ice jam; minimum daily discharge, 0.02 ft^3/s (0.001 m^3/s) July 30 - Aug. 3, Aug. 8, 11, 12, 25-28, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50 ft^3/s (1.42 m^3/s) Mar. 15, ice jam, no peak above base of 200 ft^3/s (5.66 m^3/s); maximum gage height, 8.52 ft (2.600 m) Feb. 28, ice jam; minimum daily discharge, 0.02 ft^3/s (0.001 m^3/s) July 30 - Aug. 3, Aug. 8, 11, 12, 25-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.19	.57	2.7	5.3	1.9	7.0	17	4.4	1.1	.30	.02	.04
2	.19	.65	3.1	5.0	2.0	6.0	16	4.1	1.1	.25	.02	.04
3	.21	.58	3.5	4.7	2.1	5.0	18	3.9	.82	.25	.02	.03
4	.19	.48	4.1	4.2	2.1	5.6	20	3.9	.67	.18	.03	.04
5	.16	.54	4.7	3.7	2.2	6.3	19	3.7	.74	.15	.03	.03
6	.16	1.0	4.8	3.2	2.3	7.2	17	3.7	.67	.15	.03	.03
7	.16	2.0	4.7	2.9	2.5	8.0	16	3.3	.67	.15	.03	.03
8	.19	2.3	4.5	2.7	2.7	7.0	15	3.3	.60	.15	.02	.02
9	.34	2.6	4.3	2.5	2.8	6.0	14	3.1	.60	.15	.03	.02
10	.19	2.8	4.1	2.5	3.0	8.0	13	3.1	.49	.12	.03	.02
11	.92	2.9	3.9	2.9	3.1	10	13	2.9	.49	.09	.02	.02
12	.34	3.0	4.3	3.3	3.3	15	12	2.9	.74	.08	.02	.03
13	.24	3.1	4.7	3.5	3.4	23	10	2.9	2.3	.06	.03	.03
14	.24	3.1	5.0	3.6	2.9	35	10	2.9	3.1	.06	.03	.04
15	.29	3.2	5.3	3.7	2.4	50	9.6	2.8	2.2	.06	.05	.04
16	.34	3.3	5.0	3.7	2.7	40	9.1	2.6	1.4	.06	.49	.05
17	.32	3.5	4.6	3.8	3.1	44	8.5	2.6	1.1	.05	.15	.06
18	.38	3.6	4.7	3.8	3.4	45	8.3	2.3	.74	.05	.08	.06
19	.46	3.4	5.0	3.8	3.3	44	8.1	2.2	.54	.06	.06	.06
20	.46	3.3	5.3	3.8	3.0	42	7.9	2.0	.54	.07	.05	.06
21	.43	3.1	5.7	3.8	2.8	40	7.2	1.9	.54	.06	.04	.06
22	.46	3.0	6.0	3.9	2.6	39	7.0	1.6	.49	.06	.04	.07
23	.45	2.8	4.0	3.9	2.4	37	6.2	1.3	1.4	.05	.04	.07
24	.48	2.7	4.5	3.7	2.2	35	5.5	1.2	3.3	.04	.03	.07
25	.60	2.6	4.9	3.4	2.0	33	5.1	.98	1.6	.04	.02	.08
26	.50	2.5	5.1	3.0	2.2	30	4.9	.67	.90	.03	.02	.08
27	.55	2.4	5.2	2.5	5.0	28	4.9	.54	.74	.03	.02	.07
28	.46	2.3	5.4	2.1	8.0	25	4.9	.60	.49	.03	.02	.07
29	.50	2.2	5.5	1.9	7.5	23	4.9	.67	.39	.03	.04	.07
30	.56	2.3	5.5	1.9	---	20	4.5	.74	.34	.02	.04	.08
31	.50	---	5.5	1.9	---	19	---	.98	---	.02	.04	---
TOTAL	11.46	71.82	145.6	104.6	88.9	743.1	316.6	73.78	30.80	2.90	1.59	1.47
MEAN	.37	2.39	4.70	3.37	3.07	24.0	10.6	2.38	1.03	.094	.051	.049
MAX	.92	3.6	6.0	5.3	8.0	50	20	4.4	3.3	.30	.49	.08
MIN	.16	.48	2.7	1.9	1.9	5.0	4.5	.54	.34	.02	.02	.02
AC-FT	23	142	289	207	176	1470	628	146	61	5.8	3.2	2.9

CAL YR 1979 TOTAL 16798.85 MEAN 46.0 MAX 1220 MIN .13 AC-FT 33320
WTR YR 1980 TOTAL 1592.62 MEAN 4.35 MAX 50 MIN .02 AC-FT 3160

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
16...	1430	.25	2790	8.2	12.0	10.5	9.8	94	--	60	700	190
NOV												
15...	1145	3.2	2730	8.2	15.5	.0	12.7	95	K10	64	750	280
DEC												
12...	1025	4.3	2770	8.2	.0	.0	12.0	90	K4	74	780	320
JAN												
09...	1100	2.5	3020	8.1	-26.0	.0	11.3	85	K4	K8	840	310
FEB												
06...	1135	2.3	3530	7.8	-4.0	.0	10.6	79	K1	80	950	350
MAR												
25...	1100	33	1420	8.2	10.0	.5	12.9	96	K2	290	390	150
APR												
09...	1320	17	1500	8.4	13.5	3.5	13.9	113	<1	35	360	110
MAY												
14...	1230	3.0	2400	8.3	16.0	15.0	10.0	105	24	39	600	190
27...	1130	.54	--	--	23.5	19.0	--	--	--	--	--	--
JUN												
04...	0955	.69	2610	8.2	24.5	19.0	6.2	74	210	520	710	240
JUL												
09...	1300	.14	2830	8.2	28.0	22.0	7.4	91	130	530	750	270
16...	1145	.06	--	--	27.0	23.0	--	--	--	--	--	--
AUG												
06...	1045	.03	2900	8.5	25.5	18.5	10.8	126	38	120	810	340
SEP												
18...	1100	.06	2830	8.0	14.0	11.0	9.5	91	K1	28	790	300

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
16...	100	110	520	61	8.5	12	620	0	510	6.3	1100	22
NOV												
15...	120	110	420	74	6.7	14	578	0	474	5.8	1200	11
DEC												
12...	130	110	390	72	6.1	10	564	0	462	5.7	1100	12
JAN												
09...	140	120	460	54	6.9	10	647	0	531	8.2	1200	13
FEB												
06...	150	140	510	54	7.2	11	727	0	596	18	1400	14
MAR												
25...	69	52	200	52	5.0	10	288	0	236	2.9	560	6.5
APR												
09...	63	48	190	53	4.4	7.1	299	2	249	1.9	560	5.7
MAY												
14...	95	87	360	56	7.3	12	503	0	412	4.0	990	8.3
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
04...	120	100	430	56	8.0	13	576	0	472	5.8	1100	9.5
JUL												
09...	120	110	400	53	6.3	13	586	0	480	5.9	1100	9.0
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
06...	110	130	410	52	6.3	13	547	12	468	2.9	1200	7.8
SEP												
18...	120	120	440	54	6.8	7.9	598	0	490	9.6	1200	7.3

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOT. (MG/L AS N) (00625)
OCT												
16...	.3	5.8	2120	1870	2.88	1.43	.00	--	.11	.13	.67	.78
NOV												
15...	.3	8.4	2070	2170	2.82	17.9	.08	.10	.03	.04	.55	.58
DEC												
12...	.2	9.2	2130	2080	2.90	24.7	.15	.09	.06	.07	.65	.71
JAN												
09...	.3	9.1	2350	2270	3.20	15.9	.07	.07	.08	.10	.55	.63
FEB												
06...	.2	12	2760	2600	3.75	17.1	.20	.21	.05	.06	.57	.62
MAR												
25...	.2	5.6	1020	1050	1.39	91.2	.14	.17	.11	.13	1.3	1.4
APR												
09...	.1	3.3	1070	1030	1.46	49.1	.01	.01	.02	.02	.58	.60
MAY												
14...	.3	4.3	1810	1810	2.46	14.7	.02	.04	.01	.01	.61	.62
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
04...	.3	2.9	2040	2060	2.77	3.80	.03	.01	.12	.15	.78	.90
JUL												
09...	.4	6.6	2180	2050	2.96	.82	.02	.04	.06	.07	.28	.34
16...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
06...	.4	6.3	2240	2160	3.05	.18	.00	.00	.04	.05	.96	1.0
SEP												
18...	.3	5.1	2240	2200	3.05	.36	.00	.00	.01	.01	2.2	2.2

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT											
16...	.78	3.5	.020	.06	.010	--	--	--	--	--	--
NOV											
15...	.66	2.9	.010	.03	.010	--	--	--	--	--	--
DEC											
12...	.86	3.8	.000	.00	.000	--	--	--	--	--	--
JAN											
09...	.70	3.1	.010	.03	.010	--	--	--	--	--	--
FEB											
06...	.82	3.6	.010	.03	.000	--	--	--	--	--	--
MAR											
25...	1.5	6.6	.090	.28	.040	10	3	1	10	200	200
APR											
09...	.61	2.7	.050	.15	.010	--	--	--	--	--	--
MAY											
14...	.64	2.8	.020	.06	.010	80	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	.93	4.1	.050	.15	.010	40	2	0	100	100	70
JUL											
09...	.36	1.6	.000	.00	.020	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	1.0	4.4	.120	.37	.020	--	--	--	--	--	--
SEP											
18...	2.2	9.7	.020	.06	.010	--	--	--	--	--	--

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT											
16...	--	--	--	--	--	--	730	--	--	--	--
NOV											
15...	--	--	--	--	--	--	670	--	--	--	--
DEC											
12...	--	--	--	--	--	--	620	--	--	--	--
JAN											
09...	--	--	--	--	--	--	730	--	--	--	--
FEB											
06...	--	--	--	--	--	--	790	--	--	--	--
MAR											
25...	40	180	0	0	<1	1	380	0	0	0	5
APR											
09...	--	--	--	--	--	--	350	--	--	--	--
MAY											
14...	50	--	--	--	<3	--	690	--	--	0	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	30	300	0	--	<1	1	790	0	0	0	4
JUL											
09...	480	--	--	--	--	--	1000	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	--	--	--	--	--	--	1100	--	--	--	--
SEP											
18...	--	--	--	--	--	--	920	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT											
16...	--	--	--	--	--	--	--	--	20	--	--
NOV											
15...	--	--	--	--	--	--	--	--	20	--	--
DEC											
12...	--	--	--	--	--	--	--	--	50	--	--
JAN											
09...	--	--	--	--	--	--	--	--	20	--	--
FEB											
06...	--	--	--	--	--	--	--	--	40	--	--
MAR											
25...	1	0	<3	30	13	2	11	12	79	30	0
APR											
09...	--	--	--	--	--	--	--	--	<10	--	--
MAY											
14...	--	--	<8	--	--	--	<25	--	<25	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	0	--	<3	10	7	--	<10	13	<10	70	40
JUL											
09...	--	--	--	--	--	--	--	--	30	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	--	--	--	--	--	--	--	--	40	--	--
SEP											
18...	--	--	--	--	--	--	--	--	60	--	--

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
MAR											
25...	36	80	40	38	.8	.6	.2	.03	1	0	<10
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
MAY											
14...	65	--	--	54	--	.5	--	--	--	--	<25
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	28	260	240	22	.3	.1	.2	.04	1	--	<10

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
OCT											
16...	--	--	--	--	--	--	--	--	--	--	--
NOV											
15...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
JAN											
09...	--	--	--	--	--	--	--	--	--	--	--
FEB											
06...	--	--	--	--	--	--	--	--	--	--	--
MAR											
25...	0	7	4	3	20	0	0	0	0	810	<6.0
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
MAY											
14...	--	--	--	4	--	--	--	0	--	1400	<8.0
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	5	4	0	4	20	0	0	0	0	630	<3.0
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
SEP											
18...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
OCT							
16...	--	--	--	--	--	--	--
NOV							
15...	--	--	--	--	--	--	--
DEC							
12...	--	--	--	--	--	--	--
JAN							
09...	--	--	--	--	--	--	--
FEB							
06...	--	--	--	--	--	--	--
MAR							
25...	40	30	15	27	<13	<.4	<6.7
APR							
09...	--	--	--	--	--	--	--
MAY							
14...	--	--	48	--	--	--	--
27...	--	--	--	--	--	--	--
JUN							
04...	40	30	7	10	<26	1.3	15
JUL							
09...	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--
AUG							
06...	--	--	--	--	--	--	--
SEP							
18...	--	--	--	--	--	--	--

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80058)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) ([illegible] 155)
OCT							
16...	--	--	--	11	.5	54	.04
NOV							
15...	--	--	--	17	.1	180	1.6
DEC							
12...	--	--	--	30	.2	14	.16
JAN							
09...	--	--	--	11	--	64	.43
FEB							
06...	--	--	--	12	.8	34	.21
MAR							
25...	.8	<6.9	.8	13	.8	25	2.2
APR							
09...	--	--	--	9.1	.4	28	1.3
MAY							
14...	--	--	--	12	--	57	.46
27...	--	--	--	--	--	103	.15
JUN							
04...	2.0	15	1.9	14	1.1	83	.15
JUL							
09...	--	--	--	26	.6	138	.05
16...	--	--	--	--	--	113	.02
AUG							
06...	--	--	--	21	.3	51	.00
SEP							
10...	--	--	--	23	--	38	.01

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
MAR											
25...	1	2	4	7	12	23	44	66	80	96	100
JUN											
04...	8	13	16	18	21	30	51	79	92	100	--

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
JUL					
09...	35	1.66	.460	175	192
AUG					
06...	28	5.01	1.06	26.1	30.2

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 16,79	NOV 15,79	DEC 12,79	JAN 9,80	FEB 6,80	MAR 25,80
TIME	1430	1145	1025	1100	1135	1100
TOTAL CELLS/ML	1400	2900	1400	1000	370	990
DIVERSITY: DIVISION	1.3	1.4	1.2	1.3	1.1	1.0
.CLASS	1.4	1.5	1.2	1.3	1.1	1.0
..ORDER	0.0	1.5	1.4	1.6	1.6	1.1
...FAMILY	0.0	2.0	1.8	1.7	2.0	1.4
....GENUS	0.0	2.0	1.8	1.7	2.0	1.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	140#	38	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	57	4	800#	28	130	9	19	2	15	4	13	1
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	57	4	310	11	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	51	4	--	-	20	5	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	76	6	610#	60	--	-	26	3
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	24	1	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	14	1	--	-	13	1	57	6	130#	35	13	1
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	--	-	39	4
...EUNOTIACEAE												
....EUNOTIA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	76	6	19	2	--	-	13	1
...NAVICULACEAE												
....NAVICULA	--	-	24	1	--	-	--	-	--	-	13	1
...NITZSCHIACEAE												
....NITZSCHIA	14	1	24	1	100	7	110	10	60#	16	64	6
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	--	-	26	3
.CHRYSOPHYCEAE	200	14	--	-	--	-	--	-	--	-	--	-
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	340#	24	1400#	48	--	-	--	-	--	-	--	-
...OCHROMONADACEAE												
....KEPHYRIOPSIS	--	-	47	2	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	24	1	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ..

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	OCT 16,79		NOV 15,79		DEC 12,79		JAN 9,80		FEB 6,80		MAR 25,80	
TIME	1430		1145		1025		1100		1135		1100	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	240	8	--	-	--	-	--	-	--	-
....GOMPHOSPHAERIA	720#	51	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	770#	78
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	13	1	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	900#	66	200#	20	--	-	--	-
...PETALOMONADACEAE												
....CALYCOMONAS	--	-	--	-	13	1	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	13	1
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	5	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 9,80	MAY 14,80	JUN 4,80	JUL 9,80	AUG 6,80	SEP 18,80
TIME	1320	1230	0955	1300	1045	1100
TOTAL CELLS/ML	740	1700	7800	16000	2900	4600
DIVERSITY: DIVISION	1.2	1.7	1.2	1.5	1.6	1.8
.CLASS	1.2	1.7	1.2	1.5	1.6	1.8
..ORDER	1.6	2.2	1.5	1.9	2.3	2.3
...FAMILY	2.7	2.6	2.0	2.4	2.8	2.7
....GENUS	2.7	2.9	3.1	3.0	3.6	3.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	130	1	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	82	11	400#	24	1200#	16	2500#	16	260	9	330	7
....CHLORELLA	--	-	--	-	*	0	200	1	--	-	--	-
....DICTYOSPHAERIUM	--	-	100	6	2300#	29	340	2	65	2	100	2
....OOCYSTIS	--	-	--	-	--	-	--	-	52	2	--	-
....SELENASTRUM	--	-	--	-	*	0	*	0	130	4	--	-
....TETRAEDRON	--	-	--	-	*	0	--	-	*	0	--	-
....TREUBARIA	--	-	--	-	*	0	*	0	--	-	--	-
....WESTELLA	--	-	--	-	470	6	--	-	160	5	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	51	3	470	6	1600	10	340	11	860#	19
....SCENEDESMUS	--	-	130	8	820	11	1900	11	340	11	250	6
....TETRASTRUM	--	-	--	-	--	-	270	2	--	-	100	2
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	34	5	170	10	320	4	*	0	400	14	680	15
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	41	6	77	5	*	0	*	0	65	2	180	4
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	25	1
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	*	0	25	1
...DIATOMACEAE												
....DIATOMA	170#	23	--	-	--	-	--	-	--	-	--	-
...EUNOTIACEAE												
....EUNOTIA	7	1	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	7	1	26	2	59	1	--	-	*	0	--	-
...NAVICULACEAE												
....NAVICULA	14	2	--	-	--	-	--	-	--	-	25	1
...NITZSCHIACEAE												
....NITZSCHIA	260#	35	130	8	180	2	600	4	130	4	150	3
...SURIRELLACEAE												
....SURIRELLA	41	6	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE	--	-	--	-	--	-	--	-	--	-	--	-
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-	--	-
...OCHROMONADACEAE												
....KEPHYRIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	*	0	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	*	0	--	-	--	-	51	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	APR 9,80		MAY 14,80		JUN 4,80		JUL 9,80		AUG 6,80		SEP 18,80	
TIME	1320		1230		0955		1300		1045		1100	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	440#	26	1200#	16	2300	14	260	9	1300#	28
....GOMPHOSPHAERIA	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	5400#	33	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	470#	16	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	7	1	--	-	180	2	*	0	180	6	25	1
....TRACHELOMONAS	14	2	170	10	410	5	670	4	26	1	400	9
...PETALOMONADACEAE												
....CALYCOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	68	9	--	-	--	-	130	1	26	1	76	2
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND

LOCATION.--Lat 47°35'25", long 103°15'05", in NW¼SE¼SE¼ sec.35, T.148 N., R.99 W., McKenzie County, Hydrologic Unit 10110205, at bridge on U.S. Highway 85, 17 mi (27 km) upstream from Cherry Creek, and 17.5 mi (28.2 km) south of Watford City.

DRAINAGE AREA.--8,310 mi^2 (21,520 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1934 to current year.

REVISED RECORDS (WATER YEARS).--WSP 926: 1935. WSP 1270: 1943.

GAGE.--Water-stage recorder and supplemental nonrecording gage. Datum of gage is 1,929.03 ft (587.968 m) National Geodetic Vertical Datum of 1929. Oct. 2, 1959, to June 17, 1963, water-stage recorder at present site and datum. June 18, 1963, to Nov. 28, 1964, at site 700 ft (210 m) upstream at present datum. See WSP 1729 or 1917 for history of changes prior to Oct. 2, 1959.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--46 years, 600 ft^3/s (16.99 m^3/s), 434,700 acre-ft/yr (536 hm^3/yr); median of yearly mean discharges, 470 ft^3/s (13.3 m^3/s), 341,000 acre-ft/yr (420 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 110,000 ft^3/s (3,120 m^3/s) Mar. 25, 1947, gage height, 24.0 ft (7.32 m) from floodmark, site then in use; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 865 ft^3/s (24.5 m^3/s) June 14, gage height, 3.09 ft (0.942 m), no peak above base of 8,000 ft^3/s (227 m^3/s); maximum gage height observed, 3.81 ft (1.161 m) Mar. 23, backwater from ice; no flow Jan. 12 to Feb. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	29	14	11	.00	2.0	395	50	16	25	1.5	74
2	35	31	14	10	.00	20	365	48	16	22	1.5	78
3	31	35	14	10	.00	100	340	48	18	22	1.5	191
4	31	29	16	10	.00	100	290	45	43	27	3.0	166
5	30	29	16	9.0	.00	80	260	37	25	22	4.0	137
6	30	28	18	8.0	.00	60	247	34	16	14	2.5	145
7	28	27	18	7.0	.00	50	238	31	19	13	2.0	92
8	28	30	18	5.0	.00	50	221	33	18	12	1.5	58
9	28	24	18	4.0	.00	40	206	35	17	11	14	42
10	29	22	18	2.0	.00	40	185	33	14	9.4	13	34
11	29	20	17	1.0	.00	35	172	33	15	6.5	8.2	27
12	28	18	17	.00	.00	30	156	31	119	6.5	5.0	23
13	28	18	17	.00	.00	40	142	31	410	6.5	6.5	21
14	27	18	17	.00	.00	100	134	27	420	8.8	4.0	19
15	25	18	17	.00	.00	410	126	25	172	8.8	19	18
16	24	18	16	.00	.00	360	121	25	380	7.6	378	17
17	22	18	15	.00	.00	450	116	28	256	5.5	528	16
18	21	18	15	.00	.00	450	106	27	134	7.0	405	16
19	21	18	15	.00	.00	630	106	22	94	7.0	175	15
20	28	18	15	.00	.00	500	101	20	72	6.0	92	15
21	27	18	15	.00	.00	460	97	19	64	5.0	437	18
22	25	18	15	.00	.00	760	88	18	56	4.5	265	23
23	25	18	15	.00	.00	840	81	17	62	6.0	159	19
24	24	18	14	.00	.00	820	74	16	45	6.5	121	17
25	24	18	13	.00	.00	690	72	16	42	3.5	106	31
26	25	16	13	.00	1.0	750	72	14	39	3.0	90	48
27	27	16	13	.00	2.0	700	66	13	37	3.0	74	21
28	27	14	13	.00	2.0	630	62	12	36	2.5	60	20
29	27	14	13	.00	2.0	570	60	12	36	2.0	58	19
30	27	14	13	.00	---	500	53	13	28	2.0	56	17
31	27	---	12	.00	---	400	---	16	---	1.5	68	---
TOTAL	844	630	474	77.00	7.00	10667.0	4752	829	2719	287.1	3159.2	1437
MEAN	27.2	21.0	15.3	2.48	.24	344	158	26.7	90.6	9.26	102	47.9
MAX	36	35	18	11	2.0	840	395	50	420	27	528	191
MIN	21	14	12	.00	.00	2.0	53	12	14	1.5	1.5	15
AC-FT	1670	1250	940	153	14	21160	9430	1640	5390	569	6270	2850

CAL YR 1979 TOTAL 208372.00 MEAN 571 MAX 9240 MIN .00 AC-FT 413300
WTR YR 1980 TOTAL 25882.30 MEAN 70.7 MAX 840 MIN .00 AC-FT 51340

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued
(National water-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1974 to current year.
WATER TEMPERATURES: April 1974 to current year.

REMARKS.--No flow Jan. 12 to Feb. 26. No specific conductance or temperature records available from December through February.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,400 micromhos Jan. 7-9, 1975; minimum daily, 325 micromhos, Mar. 30, 1978.
WATER TEMPERATURES: Maximum daily, 30.0°C June 5, 1975; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum observed, 3,800 micromhos Aug. 14; minimum observed, 590 micromhos Mar. 22.
WATER TEMPERATURES: Maximum, 24.0°C May 21; minimum observed, 1.0°C Nov. 7, Mar. 4, but may have been lower during a period of missing record.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT												
10...	1040	26	2250	8.6	14.0	11.0	61	10.3	89	41	K25	K15
NOV												
13...	1145	18	2550	8.1	-2.0	.5	14	11.8	94	31	K37	K30
DEC												
12...	1130	17	3500	7.9	-1.0	.0	18	12.0	79	--	K40	K55
APR												
01...	1000	E400	1350	8.2	4.5	4.5	840	10.8	86	110	K55	K70
MAY												
13...	0900	30	2850	8.5	5.0	12.5	5.3	10.8	108	24	K75	K20
JUN												
10...	1205	14	2710	8.6	27.5	22.0	44	8.6	106	36	--	--
JUL												
16...	1100	5.5	3000	8.8	--	22.0	54	8.0	--	43	K30	100
AUG												
11...	1315	8.0	2220	8.1	28.0	23.0	3900	7.8	98	170	K300	K130
SEP												
09...	1000	44	1580	8.2	7.5	10.5	420	10.2	97	510	K170	K75

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
10...	430	61	82	55	400	80	8.4	410	12	370	910	13
NOV												
13...	530	56	110	61	490	66	9.3	500	13	470	1000	12
DEC												
12...	670	150	110	95	630	82	11	650	15	520	1500	17
APR												
01...	190	0	37	24	250	73	7.9	260	7.9	200	480	8.8
MAY												
13...	500	120	97	62	480	67	9.4	490	13	380	1100	18
JUN												
10...	470	41	93	58	430	66	8.6	440	15	430	1000	16
JUL												
16...	500	96	88	67	580	71	11	600	20	400	1300	17
AUG												
11...	230	0	51	24	440	80	13	450	13	290	870	11
SEP												
09...	87	0	21	8.5	300	87	14	310	9.2	220	470	8.0

E - Estimated.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, TOTAL (MG/L AS F) (00951)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT												
10...	.3	.4	12	1710	1710	2.33	120	.00	.02	.01	.01	.13
NOV												
13...	.3	.3	12	1990	1980	2.71	96.7	.10	.02	.12	.12	.17
DEC												
12...	--	.3	11	2830	2690	3.85	130	--	--	.15	.15	.09
APR												
01...	1.7	.2	4.6	977	935	E1.33	E1060	.16	.05	.21	.49	.21
MAY												
13...	.6	.3	2.7	1960	2000	2.67	159	.01	.00	.01	.01	.00
JUN												
10...	.5	.2	8.4	2010	1880	2.73	78.1	.00	.00	.00	.01	.04
JUL												
16...	2.9	.6	6.6	2360	2320	3.21	35.0	.00	.00	.00	.01	.00
AUG												
11...	3.1	.5	7.3	1600	1600	2.18	34.6	1.3	.06	1.4	1.0	.05
SEP												
09...	1.0	.6	9.0	1030	969	1.40	122	2.4	.02	2.4	2.4	.02

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT											
10...	.05	.06	.64	.53	.77	.19	.58	.78	.59	3.5	.100
NOV											
13...	.13	.17	.60	.50	.77	.14	.63	.89	.75	3.9	.010
DEC											
12...	.09	.12	.69	.72	.78	.00	.81	.93	.96	4.1	.030
APR											
01...	.21	.27	8.7	1.7	8.9	7.0	1.9	9.1	2.4	40	1.300
MAY											
13...	.02	.03	1.3	.47	1.3	.81	.49	1.3	.50	5.8	.050
JUN											
10...	.01	.01	1.2	.78	1.2	.41	.79	1.2	.80	5.3	.100
JUL											
16...	.00	.00	.97	.89	.97	.08	.89	.97	.89	4.3	.070
AUG											
11...	.03	.04	4.1	1.9	4.1	2.2	1.9	5.5	2.9	24	2.400
SEP											
09...	.02	.03	8.5	1.6	8.5	6.9	1.6	11	4.0	48	2.600

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
OCT											
10...	.31	.010	1100	2	--	--	0	--	--	--	360
NOV											
13...	.03	.000	310	2	1	1	400	100	300	0	340
DEC											
12...	.09	.010	--	--	--	--	--	--	--	--	--
APR											
01...	4.0	.020	200	10	--	--	500	--	--	0	260
MAY											
13...	.15	.010	90	1	0	1	200	0	200	0	400
JUN											
10...	.31	.000	880	2	0	2	0	0	0	0	400
JUL											
16...	.21	.010	1000	2	--	--	0	--	--	0	410
AUG											
11...	7.4	.020	8900	43	41	2	600	500	100	10	370
SEP											
09...	8.0	.030	63000	43	--	--	1300	--	--	10	400

E - Estimated.

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)
OCT 10...	0	--	--	30	--	--	0	--	--	7	--
NOV 13...	0	0	0	0	0	0	1	1	0	1	0
DEC 12...	--	--	--	--	--	--	--	--	--	--	--
APR 01...	0	--	--	50	--	--	20	--	--	60	--
MAY 13...	0	0	0	0	0	0	2	1	1	7	5
JUN 10...	0	0	0	10	10	0	1	1	0	15	12
JUL 16...	0	--	--	10	--	--	1	--	--	7	--
AUG 11...	2	2	0	160	160	0	50	50	0	220	210
SEP 09...	3	--	--	220	--	--	100	--	--	340	--

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT 10...	--	1800	--	--	2	--	--	70	--	--	--
NOV 13...	2	480	470	10	4	4	0	90	50	10	40
DEC 12...	--	--	--	--	--	--	--	--	--	--	--
APR 01...	--	54000	--	--	34	--	--	80	1300	--	--
MAY 13...	2	230	210	20	6	4	2	80	40	30	10
JUN 10...	3	880	860	20	58	58	0	80	130	120	10
JUL 16...	--	1600	--	--	4	--	--	90	10	--	--
AUG 11...	11	170000	170000	230	250	250	0	130	3200	3200	10
SEP 09...	--	170000	--	--	110	--	--	200	3700	--	--

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
OCT 10...	.2	--	--	9	2	--	--	1	--	--	1
NOV 13...	.1	.1	.0	0	11	6	5	0	0	0	0
DEC 12...	--	--	--	--	--	--	--	--	--	--	0
APR 01...	.3	--	--	3	68	--	--	1	--	--	0
MAY 13...	.1	.0	.1	7	9	1	8	0	0	0	0
JUN 10...	2.2	1.8	.4	7	19	12	7	1	0	1	0
JUL 16...	.1	--	--	8	12	--	--	2	--	--	0
AUG 11...	.5	.0	.5	2	230	220	10	5	2	3	0
SEP 09...	1.5	--	--	3	380	--	--	8	--	--	2

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)
OCT											
10...	--	--	50	--	--	12	10	1.3	--	--	--
NOV											
13...	0	0	30	30	0	18	17	.2	ND	ND	ND
DEC											
12...	--	--	--	--	--	17	--	--	--	--	--
APR											
01...	--	--	240	--	--	28	--	--	--	--	--
MAY											
13...	0	0	20	10	10	--	16	.2	--	--	--
JUN											
10...	0	0	40	30	10	--	15	--	--	--	--
JUL											
16...	--	--	20	--	--	19	--	--	--	--	--
AUG											
11...	0	0	640	630	10	--	28	12	--	--	--
SEP											
09...	--	--	970	--	--	99	--	--	--	--	--

DATE	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39333)	CHLOR-DANE, TOTAL (UG/L) (39350)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39571)
OCT											
10...	--	--	--	--	--	--	--	--	--	--	--
NOV											
13...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39399)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)
OCT											
10...	--	--	--	--	--	--	--	--	--	--	--
NOV											
13...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
JUL											
16...	--	--	--	--	--	--	--	--	--	--	--
AUG											
11...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

Whole water ND - Not detected at 0.01 μg/L level.
Bed material ND - Not detected at 0.1 μg/mg level.

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALATHION, TOTAL (UG/L) (39530)	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39531)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	METHYL PARATHION, TOTAL (UG/L) (39600)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG) (39601)	METHYL TRITHION, TOTAL (UG/L) (39790)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG) (39791)	PARATHION, TOTAL (UG/L) (39540)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39541)
OCT											
10...	--	--	--	--	--	--	--	--	--	--	--
NOV											
13...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	TOXAPHENE, TOTAL (UG/L) (39400)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRITHION (UG/L) (39786)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG) (39787)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT											
10...	--	--	--	--	--	--	--	--	182	13	99
NOV											
13...	ND	ND	ND	ND	ND	ND	ND	7500	72	3.5	99
DEC											
12...	--	--	--	--	--	--	--	--	61	2.8	94
APR											
01...	--	--	--	--	--	--	--	--	2410	--	96
MAY											
13...	--	--	--	--	--	--	--	1500	27	2.2	84
JUN											
10...	--	--	--	--	--	--	--	19000	132	5.1	98
JUL											
16...	--	--	--	--	--	--	--	23000	80	1.2	99
AUG											
11...	--	--	--	--	--	--	--	--	5720	124	100
SEP											
09...	--	--	--	--	--	--	--	--	11200	1330	100

Whole water ND - Not detected at 0.01 μg/L level.
Bed material ND - Not detected at 0.1 μg/mg level.

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MG/L	DEGREES, C	SATURATION, %	DATE	MG/L	DEGREES, C	SATURATION, %
July 22, 1980				July 23, 1980			
1130	8.2	27.0	109	0030	6.8	23.0	84
1230	8.1	28.5	111	0130	6.7	22.5	82
1330	8.0	31.0	114	0230	6.8	21.5	82
1430	8.0	31.0	114	0330	7.0	21.0	84
1530	7.8	33.5	116	0430	7.1	20.0	83
1630	7.7	32.5	113	0530	7.3	19.5	85
1730	7.5	32.0	110	0630	7.3	19.5	85
1830	7.2	31.5	104	0730	7.6	19.5	88
1930	7.1	30.0	100	0830	7.9	21.0	94
2030	7.0	27.5	94	0930	7.9	22.5	97
2130	6.7	27.0	90	1030	7.7	24.5	99
2230	6.7	25.5	87	1130	8.0	26.5	107
2330	6.7	24.0	85				

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1900	2300				---	1400	2300	2400	2850	3500	1700
2	1280	2400				---	---	2200	2350	3150	3500	1590
3	2100	2240				1300	1530	2200	2310	2560	3400	1810
4	2000	2150				1700	---	2190	2150	2400	3400	1500
5	2100	2100				---	1500	2200	2100	2400	3500	1650
6	2110	2150				---	1500	2200	2000	2520	3200	1750
7	2190	2190				1500	---	2250	2200	2610	3490	1400
8	2100	---				1400	1550	2200	2220	2700	3490	1550
9	2150	---				1400	1560	2250	2300	2800	2200	1500
10	2100	---				---	1600	2130	2300	2900	1800	1510
11	2200	2200				---	1650	2210	2400	3010	2600	1650
12	2150	2200				---	---	2250	1900	3000	3000	1750
13	2190	2000				---	---	2250	1300	3000	2700	1800
14	2200	2050				---	1700	2260	1250	3010	3000	1810
15	2200	2140				1000	1840	2300	1250	3000	3000	---
16	2200	2100				1000	1800	2200	1850	2800	1200	2000
17	2200	2010				750	1850	2150	1750	2500	1100	2100
18	2200	2000				710	2000	2190	1300	2650	1600	2110
19	2200	2010				650	2000	2250	1650	3000	1450	2110
20	2200	2150				600	2000	2250	2150	2400	1510	2180
21	2200	2000				660	---	2280	2220	2400	1510	2200
22	2200	2000				590	---	2290	2300	2800	1400	2000
23	2200	1700				670	---	2300	2300	2850	1100	2100
24	2200	1900				670	---	2300	2100	3000	1150	2100
25	2200	2050				1070	---	2400	2300	3030	1200	1850
26	2200	2000				1130	2020	2400	2390	3500	1190	1800
27	2150	1990				1150	2100	2350	2400	3500	1290	1900
28	2200	---				1160	2190	2400	2450	3500	1350	2150
29	2200	---				---	2200	2400	2400	3500	1400	2000
30	2100	---				1090	2190	2400	3000	3500	1350	2200
31	2190	---				1310	---	2350	---	3500	---	---
MEAN	2130	2080				1020	1810	2270	2100	2920	2210	1850

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	3.0				---	5.5	19.0	18.0	18.0	20.0	16.0
2	12.0	6.0				---	---	16.0	17.0	19.0	21.0	17.0
3	11.0	4.0				3.0	3.0	18.0	17.0	22.0	20.0	16.0
4	11.0	5.0				1.0	---	18.0	19.0	21.0	12.0	12.0
5	12.0	2.0				---	3.0	15.0	23.0	19.0	19.0	13.0
6	9.0	2.0				---	6.5	15.0	17.0	22.0	18.0	14.5
7	10.0	1.0				2.0	---	8.0	12.0	21.0	20.0	19.0
8	11.0	---				3.0	4.0	10.0	15.0	21.0	18.0	17.0
9	9.0	---				2.0	3.5	12.0	13.0	18.0	17.0	10.5
10	12.0	---				---	6.5	10.0	19.0	19.0	18.0	12.5
11	12.0	4.0				---	6.0	9.0	19.0	20.0	16.0	15.0
12	11.0	3.0				---	---	10.0	17.0	17.0	17.0	15.0
13	6.0	4.0				---	---	10.0	19.0	22.0	17.0	13.0
14	6.0	5.0				---	8.0	11.0	20.0	20.0	15.0	14.0
15	10.0	4.0				4.0	9.0	13.0	16.0	20.0	17.0	---
16	11.0	6.0				3.0	10.0	16.0	17.0	19.0	16.0	9.0
17	9.0	5.0				4.0	7.0	17.0	19.0	20.0	15.0	13.0
18	10.0	5.0				5.0	15.0	17.0	17.0	18.0	19.0	10.0
19	9.0	5.0				3.0	18.0	20.0	17.0	17.0	20.0	13.0
20	10.0	2.0				5.0	18.0	20.0	18.0	21.0	20.0	13.0
21	7.0	3.0				2.0	---	24.0	18.0	21.0	16.0	15.0
22	5.0	3.0				2.0	---	22.0	20.0	22.0	16.0	10.0
23	11.0	2.0				2.0	---	20.0	19.0	21.0	22.0	13.0
24	6.0	---				4.0	---	19.0	19.0	22.0	19.0	10.0
25	9.0	---				3.0	---	18.0	19.0	17.0	15.0	8.5
26	9.0	---				4.5	16.0	17.0	17.0	19.0	16.0	18.0
27	9.0	---				4.0	15.0	19.0	17.0	22.0	13.0	10.0
28	7.0	---				6.0	17.0	19.0	13.0	21.0	17.0	10.0
29	7.0	---				---	19.0	18.0	14.0	20.0	19.0	15.0
30	5.0	---				5.0	16.0	17.0	21.0	20.0	16.0	12.0
31	3.0	---				9.0	---	16.0	---	20.0	---	---
MEAN	9.0	3.5				3.5	10.5	16.0	17.5	20.0	17.5	13.0

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO JULY 1980

DATE	NOV 13,79		MAY 13,80		JUN 10,80		JUL 16,80	
TIME	1145		0900		1205		1100	
TOTAL CELLS/ML	7500		1500		19000		23000	
DIVERSITY: DIVISION	0.9		1.8		1.5		0.9	
.CLASS	0.9		1.8		1.5		0.9	
..ORDER	0.9		2.4		2.0		1.3	
...FAMILY	1.5		2.8		2.2		1.4	
....GENUS	2.3		2.9		2.6		1.5	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	60	1	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	3400#	45	260#	18	5000#	26	1000	4
....CHODATELLA	160	2	--	-	--	-	--	-
....CLOSTERIOPSIS	81	1	--	-	--	-	--	-
....DICTYOSPHAERIUM	240	3	--	-	--	-	--	-
....KIRCHNERIELLA	40	1	--	-	2800	15	--	-
....OOCYSTIS	200	3	--	-	--	-	--	-
....SELENASTRUM	200	3	--	-	--	-	200	1
...SCENEDESMACEAE								
....ACTINASTRUM	970	13	--	-	--	-	--	-
....CRUCIGENIA	--	-	220	15	400	2	200	1
....SCENEDESMUS	81	1	--	-	--	-	300	1
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	91	6	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	210	14	100	1	--	-
....MELOSIRA	--	-	13	1	--	-	--	-
..PENNALES								
...NAVICULACEAE								
....ENTOMONEIS	--	-	--	-	100	1	--	-
....NAVICULA	--	-	13	1	200	1	--	-
...NITZSCHIACEAE								
....NITZSCHIA	120	2	300#	20	2000	11	2300	10
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	2000#	26	170	11	5100#	27	2400	10
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	3000#	16	17000#	72
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	13	1	--	-	*	0
....TRACHELOMONAS	--	-	190	13	100	1	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	200	1	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06338000 LAKE SAKAKAWEA NEAR RIVERDALE, ND

LOCATION.--Lat 47°30'10", long 101°25'50", in S½ sec.31, T.147 N., R.84 W., Mercer County, Hydrologic Unit 10110101, in control structure of Garrison Dam, 2.5 mi (4.0 km) west of Riverdale, 14 mi (23 km) upstream from Knife River, and at mile 1,389.9 (2,236.3 km).

DRAINAGE AREA.--181,400 mi^2 (469,800 km^2), approximately.

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1966, published as Garrison Reservoir near Riverdale.

REVISED RECORDS.--WSP 1559: 1957(M).

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth-fill dam; storage began in November 1953. Maximum capacity, 24,200,000 acre-ft (29.8 km^3) below elevation 1,854.0 ft (565.10 m), top of 29-ft (8.84 m) gates. Normal maximum, 22,700,000 acre-ft (28.0 km^3) below elevation 1,850.0 ft (563.88 m), of which about 4,300,000 acre-ft (5.30 km^3) is designated for flood control. Elevation of crest of spillway, 1,825.0 ft (556.26 m), surmounted by radial gates. Inactive storage, 5,000,000 acre-ft (6.16 km^3) below elevation 1,775.0 ft (541.02 m). Dead storage, zero at elevation 1,672.0 ft (509.63 m). Snake Creek arm of the reservoir has connecting gate to main reservoir, with sill at elevation, 1,810 ft (551.69 m). Figures herein represent total contents.

COOPERATION.--Elevation and contents furnished by Corps of Engineers from capacity table dated July 1971. Elevations are those observed; contents are adjusted for wind effect.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 24,368,000 acre-ft (30.0 km^3) July 25, 1975, elevation, 1,854.6 ft (565.28 m); minimum since first reaching normal maximum level in July of 1969, 14,742,000 acre-ft (18.2 km^3) Mar. 13, 1978, elevation, 1,825.2 ft (556.32 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 20,700,000 acre-ft (25.5 km^3) Oct. 1, elevation, 1,844.6 ft (562.23 m); minimum, 18,194,000 acre-ft (22.4 km^3) May 24, elevation, 1,837.0 ft (559.92 m).

MONTHEND ELEVATION AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1844.6	20,716,000	--
Oct. 31	1844.3	20,479,000	-237,000
Nov. 30	1843.1	20,258,000	-221,000
Dec. 31	1842.2	19,853,000	-405,000
CAL YR 1979	--	--	+786,000
Jan. 31	1840.5	19,293,000	-560,000
Feb. 29	1838.5	18,661,000	-632,000
Mar. 31	1837.3	18,279,000	-382,000
Apr. 30	1837.1	18,229,000	-50,000
May 31	1837.6	18,382,000	+153,000
June 30	1839.6	19,072,000	+690,000
July 31	1839.4	18,954,000	-118,000
Aug. 31	1838.4	18,559,000	-395,000
Sept. 30	1837.9	18,410,000	-149,000
WTR YR 1980	--	--	-2,306,000

06338490 MISSOURI RIVER AT GARRISON DAM, ND

LOCATION.--Lat 47°30'08", long 101°25'50", in S¼ sec.31, T.147 N., R.84 W., Mercer County, Hydrologic Unit 10130101, downstream from dam at National Fish Hatchery's supply line from penstocks 4 and 5, in control structure of Garrison Dam, 2.5 mi (4.0 km) west of Riverdale, 14 mi (23 km) upstream from Knife River, and at mile 1,389.9 (2,236.3 km).

DRAINAGE AREA.--181,400 mi^2 (469,800 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Flow meter and gate readings.

REMARKS.--Records good. Many diversions above station. Flow regulated by Lake Sakakawea (station 06338000). Prior to October 1969 records were obtained at a site 9.1 mi (14.6 km) downstream. Discharges at the downstream site were generally about 7 percent greater than those furnished by the Corps of Engineers for the present site.

COOPERATION.--Records furnished by the Corps of Engineers.

AVERAGE DISCHARGE.--11 years, 26,230 ft^3/s (743 m^3/s), 19,000,000 acre-ft/yr (23.4 km^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 65,200 ft^3/s (1,850 m^3/s) July 25, 1975; minimum daily, 6,000 ft^3/s (170 m^3/s) Sept. 29, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 29,700 ft^3/s (841 m^3/s) Feb. 6; minimum daily, 13,100 ft^3/s (371 m^3/s) Nov. 27, Dec. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17000	13800	15000	22700	28100	28800	20000	18200	19000	23100	25200	22800
2	17300	13600	13100	21700	28200	29300	20100	17900	20100	22900	23600	23200
3	17000	13800	15700	22100	28000	28500	20200	17900	20600	23300	23600	22600
4	17400	13800	15600	18000	28200	28900	19800	18000	21100	22700	23000	22600
5	16200	14400	16100	17900	29100	28900	19700	18600	20400	23000	24700	22300
6	15800	13800	16400	17700	29700	28800	20100	18600	20500	22600	25000	21600
7	15900	13800	18800	18200	29200	29200	19800	18500	20500	26600	24900	21800
8	16000	13800	16400	17900	29300	29100	20100	18200	20200	27500	24700	21900
9	15800	13900	16200	18100	28600	29200	20200	17900	20200	28100	24500	21500
10	14800	13900	19800	18100	29000	29000	20100	17700	19400	28400	22800	21500
11	14900	13800	22500	18300	28500	29400	20200	18300	19900	29200	22000	21500
12	14900	13800	25400	18100	29000	29100	20100	17500	19900	28800	22700	21300
13	15000	13900	25000	18200	29400	29300	20100	17600	19500	28500	23200	21300
14	15000	13700	24200	19300	29200	29500	20000	18000	19900	28400	23000	21700
15	15000	13600	24800	19800	29200	29600	20700	17800	19300	28100	23100	21600
16	14900	14300	24800	20800	29300	28600	20400	17600	19700	28900	22800	21000
17	15100	14200	17200	21800	29100	29500	20600	17800	19300	28300	22900	21000
18	14800	14700	16700	22700	29300	29400	20300	18000	19200	28600	24800	21900
19	15000	14500	16700	24400	29200	29100	19700	17900	20100	28300	23500	22900
20	14900	14400	16600	25200	29400	28800	19600	18400	20200	28700	23600	21500
21	14800	15500	17800	25800	29100	26700	20400	18400	20000	28300	23500	21600
22	15000	14200	18900	26300	29300	24500	19900	18100	20900	28000	22900	21500
23	14300	14400	19600	27100	29200	21200	19700	18400	21700	25000	23100	18000
24	14100	14300	20000	27000	28800	19900	19800	19000	22000	25100	24000	21900
25	14100	14200	19900	26000	29300	19700	20000	19500	22800	23800	24300	21900
26	14000	14100	19900	26000	29200	19700	20100	18900	23200	24500	22900	21800
27	13800	13100	21000	25900	29000	20800	20900	19600	23200	25100	23300	21800
28	13200	14900	21900	27200	29100	22700	19900	19400	23200	23700	23200	22000
29	13900	14900	22000	27800	28800	21300	17800	20000	23600	23400	23100	21500
30	13600	13300	22100	27600	---	21000	18000	20200	23000	23600	24600	21600
31	13700	---	21900	28000	---	22600	---	18700	---	23700	23900	---
TOTAL	467200	422400	602000	695700	840800	822100	598300	570600	622600	808200	732400	651100
MEAN	15070	14080	19420	22440	28990	26520	19940	18410	20750	26070	23630	21700
MAX	17400	15500	25400	28000	29700	29600	20900	20200	23600	29200	25200	23200
MIN	13200	13100	13100	17700	28000	19700	17800	17500	19000	22600	22000	18000
AC-FT	926700	837800	1194000	1380000	1668000	1631000	1187000	1132000	1235000	1603000	1453000	1291000

CAL YR 1979 TOTAL 9171200 MEAN 25130 MAX 39600 MIN 13100 AC-FT 18190000
WTR YR 1980 TOTAL 7833400 MEAN 21400 MAX 29700 MIN 13100 AC-FT 15540000

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Samples collected at National Fish Hatchery's supply line from penstocks 4 and 5, in control structure of Garrison Dam.

PERIOD OF RECORD.--Water years 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1971 to current year.
WATER TEMPERATURES: October 1971 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 870 micromhos May 4, 18, 19, July 4, 1980; minimum daily, 553 micromhos Dec. 24, 1975.
WATER TEMPERATURES: Maximum daily, 18.0°C Sept. 11, 12, 1980; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 870 micromhos May 4, 18, 19, July 4; minimum, 610 micromhos Mar. 5, 9.
WATER TEMPERATURES: Maximum, 18.0°C Sept. 11, 12; minimum 2.5°C Jan. 30 - Feb. 8, 11, 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
OCT											
26...	1100	E14000	740	8.5	10.0	12.0	.90	9.3	--	8	<1
NOV											
21...	0830	E15500	750	8.4	--	8.0	.90	10.6	--	--	<1
DEC											
21...	1000	E17600	750	8.1	4.5	3.5	1.1	12.1	--	10	K1
JAN											
23...	0945	E27100	745	8.3	-4.0	2.0	.80	12.5	--	--	<1
FEB											
27...	1140	E29000	755	8.1	-3.5	2.0	.50	12.1	88	--	<1
MAR											
27...	1300	E20800	770	8.3	--	2.0	.60	11.9	86	19	<1
APR											
21...	1300	E20400	774	8.3	33.0	2.5	.50	11.9	88	10	K2
MAY											
27...	1430	E19600	790	8.0	34.0	7.0	.90	10.9	99	23	K1
JUN											
23...	1310	E21700	790	8.1	35.0	8.5	.30	10.3	91	13	K1
JUL											
23...	0830	E25000	780	8.2	23.5	12.0	1.1	8.8	81	9	<1
AUG											
20...	1330	E23600	800	8.1	18.0	15.0	1.9	7.2	72	12	K7
SEP											
22...	1400	E21500	810	8.2	11.5	15.5	1.4	8.3	82	4	K2

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
OCT										
26...	K5	220	75	57	20	81	54	2.4	86	4.9
NOV										
21...	<1	230	84	54	24	74	53	2.1	78	4.3
DEC										
21...	<1	230	88	54	23	73	40	2.1	78	4.5
JAN										
23...	<1	230	84	54	24	76	41	2.2	81	4.6
FEB										
27...	<1	250	98	58	25	79	40	2.2	84	4.6
MAR										
27...	<1	250	95	57	25	79	41	2.2	83	4.5
APR										
21...	<1	260	100	60	27	82	40	2.2	87	4.7
MAY										
27...	<1	250	85	57	25	66	36	1.8	71	4.6
JUN										
23...	K1	250	74	59	26	78	40	2.1	83	4.5
JUL										
23...	K2	250	88	58	25	73	38	2.0	78	5.1
AUG										
20...	K3	240	79	56	24	73	39	2.1	78	4.5
SEP										
22...	K8	250	98	58	25	75	39	2.1	79	4.3

E - Estimated.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, TOTAL (MG/L AS F) (00951)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)
OCT 26...	150	210	9.9	--	.4	14	--	488	.66	.12
NOV 21...	150	250	9.9	--	.5	6.5	495	515	.67	--
DEC 21...	150	230	9.9	.3	.3	6.4	499	492	.68	.18
JAN 23...	150	230	9.8	--	.4	6.4	509	496	.69	--
FEB 27...	150	250	11	--	.5	6.4	516	525	.70	--
MAR 27...	150	240	9.6	.4	.4	6.4	503	513	.68	.12
APR 21...	160	250	11	.6	.5	6.9	545	539	.74	.11
MAY 27...	160	230	9.1	.5	.5	6.3	539	495	.73	.12
JUN 23...	180	240	10	.5	.5	6.7	521	533	.71	.12
JUL 23...	160	240	10	.7	.7	6.5	524	515	.71	.08
AUG 20...	160	230	12	.6	.5	6.3	499	503	.68	.03
SEP 22...	150	230	11	1.0	.6	6.3	641	501	.87	.02

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)
OCT 26...	.02	.14	.15	.01	.07	.09	.57	.49	.58	.02
NOV 21...	--	.21	.31	.02	.03	.04	.38	.22	.40	.15
DEC 21...	.00	.18	.16	.00	.03	.04	.74	.52	.74	.19
JAN 23...	--	.15	.15	.01	.03	.04	.92	.25	.93	.65
FEB 27...	--	.16	.16	.02	.00	.00	.25	.86	.27	.00
MAR 27...	.01	.13	.12	.04	.04	.05	.39	.28	.43	.11
APR 21...	.00	.11	.12	.01	.01	.01	.67	.38	.68	.29
MAY 27...	.00	.12	.13	.00	.01	.01	1.1	.87	1.1	.22
JUN 23...	.01	.13	.11	.03	.04	.05	.41	.39	.44	.01
JUL 23...	.00	.08	.09	.00	.00	.00	.65	.37	.65	.28
AUG 20...	.00	.03	.00	.00	.00	.00	.38	.42	.38	.00
SEP 22...	.00	.02	.03	.00	.00	.00	.36	.26	.36	.10

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ALUM-INUM, SUS-PENDED RECOV. (UG/L AS AL) (01107)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)
OCT 26...	.56	.72	.71	3.2	.010	.03	.000	100	--	--
NOV 21...	.25	.61	.56	2.7	.010	.03	.000	--	--	--
DEC 21...	.55	.92	.71	4.1	.000	.00	.010	0	0	10
JAN 23...	.28	1.1	.43	4.8	.000	.00	.010	--	--	--
FEB 27...	.86	.43	1.0	1.9	.010	.03	.000	--	--	--
MAR 27...	.32	.56	.44	2.5	.020	.06	.020	40	40	0
APR 21...	.39	.79	.51	3.5	.010	.03	.010	50	--	--
MAY 27...	.88	1.2	1.0	5.4	.010	.03	.010	180	--	--
JUN 23...	.43	.57	.54	2.5	.010	.03	.010	140	130	10
JUL 23...	.37	.73	.46	3.2	.010	.03	.040	120	--	--
AUG 20...	.42	.41	.42	1.8	.010	.03	.010	40	--	--
SEP 22...	.26	.38	.29	1.7	.030	.09	.010	60	50	10

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
OCT 26...	2	--	--	200	--	--	0	--	--	140
NOV 21...	--	--	--	--	--	--	--	--	--	--
DEC 21...	1	0	1	400	300	60	0	0	<1	120
MAR 27...	2	1	1	200	100	60	0	0	<1	330
APR 21...	2	--	--	200	--	--	0	--	--	160
MAY 27...	3	--	--	100	--	--	0	--	--	170
JUN 23...	3	0	3	100	40	60	0	0	<1	150
JUL 23...	3	--	--	100	--	--	0	--	--	130
AUG 20...	2	--	--	0	--	--	0	--	--	130
SEP 22...	3	1	2	100	50	50	10	10	<1	140

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)
OCT 26...	1	--	--	0	--	--	0	--	--	1	--
NOV 21...	--	--	--	--	--	--	--	--	--	--	--
DEC 21...	0	0	<1	12	12	0	0	0	<3	5	5
MAR 27...	0	0	<1	20	20	0	1	0	<3	2	0
APR 21...	1	--	--	0	--	--	0	--	--	1	--
MAY 27...	0	--	--	0	--	--	2	--	--	1	--
JUN 23...	1	1	<1	0	0	0	0	0	<3	6	5
JUL 23...	0	--	--	0	--	--	2	--	--	6	--
AUG 20...	0	--	--	0	--	--	0	--	--	5	--
SEP 22...	0	0	<1	10	0	20	1	1	<3	7	6

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT 26...	--	80	--	--	2	--	--	50	--	--	8
NOV 21...	--	--	--	--	--	--	--	--	--	--	--
DEC 21...	0	50	40	<10	3	3	0	50	0	50	50
MAR 27...	5	30	20	<10	0	0	0	50	0	50	10
APR 21...	--	60	--	--	2	--	--	60	--	--	10
MAY 27...	--	90	--	--	4	--	--	50	--	--	10
JUN 23...	1	140	140	<10	3	3	0	60	10	50	10
JUL 23...	--	110	--	--	4	--	--	60	--	--	10
AUG 20...	--	120	--	--	3	--	--	60	--	--	10
SEP 22...	1	120	120	<10	4	4	0	60	0	60	10

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)
OCT 26...	--	--	.0	--	--	0	--	--	5	--	--
NOV 21...	--	--	--	--	--	--	--	--	--	--	--
DEC 21...	50	<1	.0	.0	.0	0	0	<10	4	1	3
MAR 27...	9	<1	.1	.1	.0	2	0	<10	0	0	3
APR 21...	--	--	.0	--	--	2	--	--	4	--	--
MAY 27...	--	--	.2	--	--	1	--	--	5	--	--
JUN 23...	9	1	.0	.0	.0	3	<3	<10	0	0	7
JUL 23...	--	--	.0	--	--	2	--	--	5	--	--
AUG 20...	--	--	.2	--	--	0	--	--	3	--	--
SEP 22...	9	<1	.1	.1	.0	4	<4	<10	5	1	4

DATE	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT 26...	1	--	--	0	--	--	--	0	--	--
NOV 21...	--	--	--	--	--	--	--	--	--	--
DEC 21...	1	1	0	0	0	0	.0	10	7	<3
JAN 23...	--	--	--	0	--	--	--	--	--	--
FEB 27...	--	--	--	--	--	--	--	--	--	--
MAR 27...	1	0	1	0	0	0	.0	30	30	<3
APR 21...	1	--	--	1	--	--	--	70	--	--
MAY 27...	1	--	--	0	--	--	--	30	--	--
JUN 23...	1	0	1	0	0	0	<6.0	100	100	3
JUL 23...	1	--	--	0	--	--	--	30	--	--
AUG 20...	1	--	--	0	--	--	--	30	--	--
SEP 22...	1	0	1	0	0	0	1.0	20	20	<3

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED (MG/L AS C) (00689)
OCT										
26...	--	--	--	--	--	--	--	4.4	--	--
NOV										
21...	--	--	--	--	--	--	--	5.0	--	--
DEC										
21...	--	--	--	--	--	--	--	8.1	7.4	.1
JAN										
23...	--	--	--	--	--	--	--	3.7	--	--
FEB										
27...	--	--	--	--	--	--	--	7.4	--	--
MAR										
27...	--	--	--	--	--	--	--	8.5	8.3	.2
APR										
21...	--	--	--	--	--	--	--	4.7	--	--
MAY										
27...	--	--	--	--	--	--	--	5.2	--	--
JUN										
23...	--	--	--	--	--	--	--	--	6.2	.1
JUL										
23...	--	--	--	--	--	--	--	6.4	--	--
AUG										
20...	--	--	--	--	--	--	--	5.1	--	--
SEP										
22...	9.1	<.4	7.9	.6	7.5	.6	.07	--	5.8	.2

DATE	PHYTO- PLANK- TON, TOTAL (CELLS PER ML) (60050)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO- SURE (DAYS) (00022)
NOV						
21...	670	--	--	--	--	--
MAR						
27...	230	--	--	--	--	--
APR						
21...	--	.157	.079	.040	.000	25
MAY						
27...	970	--	--	--	--	--
JUN						
23...	65	3.54	2.60	.980	.580	27
JUL						
23...	11000	24.7	24.3	.540	.000	30
AUG						
20...	710	17.5	15.0	21.4	1.36	29
SEP						
22...	920	31.4	26.8	21.5	3.49	33

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MG/L	DEGREES, C	SATURATION, %
Aug. 20, 1980			
1300	7.2	15.0	72
1400	7.3	15.0	73
1500	7.3	15.0	73
1600	7.3	14.5	72
1700	7.2	15.0	72
1800	7.3	15.0	73
1900	7.4	15.0	74
2000	7.5	15.0	75
2100	7.6	14.5	75
2200	7.6	14.5	75
2300	7.6	14.0	74
2400	7.5	13.0	71

DATE	MG/L	DEGREES, C	SATURATION, %
Aug. 21, 1980			
0100	7.5	13.0	71
0200	7.5	13.0	71
0300	7.5	13.0	71
0400	7.5	13.0	71
0500	7.5	12.5	70
0600	7.4	13.0	70
0700	7.1	13.0	67
0800	7.1	12.5	66
0900	7.1	12.5	66
1000	7.1	15.5	71
1100	7.1	16.0	71
1200	7.2	16.0	72
1300	7.3	16.0	73

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	760	720	800	740	780	720	725	840	800	800	800	760
2	750	720	770	725	800	760	745	850	800	810	825	800
3	730	750	798	700	775	800	775	850	660	850	815	780
4	710	770	805	790	800	625	750	870	800	870	800	760
5	720	760	805	790	800	610	745	840	800	860	800	780
6	710	730	760	825	790	750	760	770	825	860	790	790
7	730	710	780	750	790	710	775	750	810	840	780	750
8	750	740	770	760	790	625	750	800	800	800	800	790
9	725	750	750	760	725	610	730	780	810	800	810	800
10	730	730	825	775	775	770	790	780	810	815	800	790
11	745	750	800	760	800	760	825	800	810	790	800	800
12	750	730	800	760	760	760	800	800	800	790	795	760
13	725	800	800	770	760	750	800	800	820	800	790	780
14	750	800	800	750	760	750	790	850	810	800	750	780
15	740	790	750	710	770	750	710	850	800	800	770	770
16	730	760	750	750	750	750	700	860	800	790	755	675
17	730	760	750	720	760	760	800	860	810	770	740	775
18	730	750	750	760	760	755	720	870	820	825	790	710
19	730	790	775	770	750	750	750	870	800	850	800	755
20	740	780	750	760	730	750	790	800	820	825	800	760
21	740	790	750	765	760	765	690	790	760	810	800	750
22	750	790	800	760	790	760	740	775	820	810	800	750
23	760	780	750	755	760	800	700	800	820	810	800	750
24	760	780	755	760	750	760	780	790	820	810	800	790
25	740	810	750	760	710	825	690	775	850	800	800	750
26	740	800	740	750	720	850	790	800	835	810	775	750
27	730	790	750	775	740	850	800	775	810	800	760	760
28	745	790	750	775	750	800	650	800	820	800	775	750
29	740	780	750	775	700	675	760	820	850	840	750	750
30	725	750	750	850	---	725	850	850	800	810	760	750
31	720	---	750	800	---	775	---	790	---	800	800	---
MEAN	737	765	770	763	762	745	756	815	806	814	788	764

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.0	12.5	8.0	4.0	2.5	3.0	4.0	4.5	10.0	10.0	14.0	14.5
2	12.0	12.0	8.0	3.5	2.5	4.0	4.0	4.5	8.0	10.5	14.5	13.5
3	11.0	12.0	7.0	3.0	2.5	3.0	4.0	4.5	7.0	10.0	13.5	16.0
4	11.5	11.5	7.5	5.0	2.5	3.0	4.0	4.0	8.0	11.0	15.0	16.0
5	13.0	11.0	7.5	4.5	2.5	3.0	4.0	5.0	7.0	10.5	14.0	17.0
6	11.0	11.0	6.0	4.5	2.5	3.0	4.0	6.0	8.0	10.5	16.0	16.5
7	12.0	11.5	6.0	4.0	2.5	3.5	4.5	7.0	7.5	11.0	16.0	14.5
8	13.5	11.0	6.5	4.0	2.5	3.0	4.5	5.0	8.0	14.0	15.0	16.5
9	13.0	11.0	6.5	4.0	3.0	3.0	4.5	6.0	9.0	16.0	15.5	17.0
10	15.0	11.5	6.0	4.0	3.0	3.5	4.0	7.0	10.0	14.0	15.0	14.0
11	15.0	11.0	5.5	3.5	2.5	3.5	4.0	5.0	9.5	14.0	14.0	18.0
12	15.0	11.5	5.5	3.5	3.0	3.5	4.0	5.0	9.0	14.0	14.0	18.0
13	13.0	10.0	5.0	3.5	3.0	3.5	4.0	5.0	10.0	14.0	16.0	17.0
14	12.0	10.0	4.5	3.5	3.0	3.5	4.5	5.0	9.5	14.0	14.0	15.0
15	12.0	10.0	4.5	4.0	3.0	3.5	4.0	5.0	9.0	14.0	13.0	17.0
16	11.5	9.5	4.0	4.0	3.5	3.5	4.0	5.0	9.0	14.0	14.0	17.0
17	11.5	10.0	4.5	4.0	3.0	3.5	4.0	5.0	8.5	15.0	14.0	17.5
18	12.0	9.5	4.5	3.5	3.0	3.5	4.5	5.0	10.5	14.0	14.0	17.0
19	13.0	9.0	4.5	3.0	3.5	5.0	4.5	5.0	10.5	14.0	13.5	17.0
20	13.5	9.0	4.0	3.5	3.5	3.0	4.0	6.0	10.0	14.0	13.0	16.5
21	13.5	9.0	4.0	3.5	3.5	3.5	7.0	7.0	9.5	14.0	13.5	16.5
22	14.0	8.5	3.5	4.0	3.5	4.0	7.0	7.0	10.0	14.0	14.0	15.5
23	13.5	8.0	4.0	4.0	2.5	4.0	5.0	5.0	10.0	14.0	14.0	17.0
24	13.5	8.5	4.0	4.0	3.0	3.5	4.5	5.0	10.0	14.0	14.0	15.0
25	13.5	9.0	4.0	4.0	3.5	4.0	4.0	5.0	9.5	13.5	14.0	15.5
26	13.5	8.5	4.5	3.5	3.0	4.0	4.0	6.0	10.0	14.0	15.0	17.0
27	13.5	8.5	4.5	3.0	3.0	4.0	5.0	9.0	11.0	13.0	14.0	17.0
28	13.0	8.5	4.5	3.0	3.0	3.5	5.0	7.5	10.0	13.5	14.0	16.0
29	13.5	8.5	4.0	3.0	3.0	4.5	5.0	8.5	9.5	12.5	14.0	15.0
30	13.0	8.5	4.0	2.5	---	4.5	4.5	6.0	13.0	13.0	14.0	17.0
31	13.0	---	4.0	2.5	---	3.5	---	6.5	---	12.0	15.0	---
MEAN	13.0	10.0	5.0	3.5	3.0	3.5	4.5	5.5	9.5	13.0	14.5	16.0

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 21,79	MAR 27,80	MAY 27,80	JUN 23,80
TIME	0830	1300	1430	1310
TOTAL CELLS/ML	670	230	970	65
DIVERSITY: DIVISION	0.2	1.2	1.2	0.0
.CLASS	0.2	1.2	1.2	0.0
..ORDER	0.7	1.3	1.3	0.0
...FAMILY	0.7	1.3	1.5	0.0
....GENUS	0.7	2.0	2.2	0.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	--	-	13#	20
....CHODATELLA	--	-	--	-	13	1	--	-
....KIRCHNERIELLA	--	-	14	6	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	52#	80
....SELENASTRUM	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	13	1	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	77	8	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	28	12	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	5	1	--	-	26	3	--	-
....MELOSIRA	66	10	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-
..PENNALES								
...DIATOMACEAE								
....DIATOMA	--	-	--	-	26	3	--	-
...FRAGILARIACEAE								
....ASTERIONELLA	--	-	83#	35	90	9	--	-
....FRAGILARIA	570#	86	83#	35	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	25	4	28	12	26	3	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....APHANIZOMENON	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	210#	21	--	-
....PHORMIDIUM	--	-	--	-	490#	51	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

MISSOURI RIVER MAIN STEM

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUL 23,80	AUG 20,80	SEP 22,80
TIME	0830	1330	1400
TOTAL CELLS/ML	11000	710	920
DIVERSITY: DIVISION	0.1	1.2	0.9
.CLASS	0.1	1.2	0.9
..ORDER	0.1	1.6	0.9
...FAMILY	0.2	1.7	1.1
....GENUS	0.2	1.9	1.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	13	2	13	1
....CHODATELLA	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	13	1
....TETRAEDRON	--	-	--	-	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	58	1	52	7	--	-
....SCENEDESMUS	--	-	--	-	52	6
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	13	2	--	-
....MELOSIRA	--	-	90	13	--	-
....STEPHANODISCUS	--	-	13	2	--	-
..PENNALES						
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....ASTERIONELLA	--	-	--	-	--	-
....FRAGILARIA	--	-	--	-	--	-
....SYNEDRA	--	-	13	2	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	*	0	13	2	39	4
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	65	7
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	--	-	--	-	52	6
....ANACYSTIS	--	-	52	7	680#	75
..HORMOGONALES						
...NOSTOCACEAE						
....APHANIZOMENON	10000#	97	--	-	--	-
...OSCILLATORIACEAE						
....OSCILLATORIA	260	2	450#	64	--	-
....PHORMIDIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339010 MISSOURI RIVER ABOVE STANTON, ND

LOCATION.--Lat 47°21'45", long 101°21'25", SE¼NE¼SE¼ sec.22, T.145 N., R.84 W., Mercer County, Hydrologic Unit 10130101, 9 mi (14 km) south of Riverdale, and at mile 1,378 (2,217 km).

DRAINAGE AREA.--181,400 mi² (469,800 km²), approximately.

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1600.00 ft (487.680 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 72.24 ft (22.019 m) Jan. 29, 1977; minimum daily recorded, 64.80 ft (19.751 m) May 7, 1978.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66.63	65.92	66.07	67.37	68.19	68.10	67.00	66.79	66.82	67.60	67.99	67.56
2	66.40	65.60	65.89	67.32	68.27	68.32	66.83	66.79	67.05	67.58	68.01	67.66
3	66.26	65.70	66.08	67.43	68.28	68.39	66.97	66.81	67.13	67.67	67.73	67.41
4	66.67	65.84	66.08	66.76	68.32	67.73	66.77	66.86	67.23	67.59	67.69	67.63
5	66.17	65.84	66.36	66.55	68.55	68.07	66.86	66.73	67.07	67.60	67.76	67.39
6	66.19	65.75	66.20	66.59	68.23	68.08	66.87	66.73	66.98	67.62	67.84	67.43
7	66.15	65.76	66.29	66.94	68.18	68.25	66.94	66.84	67.16	68.05	68.05	67.36
8	66.28	65.94	66.57	66.71	68.33	68.38	66.86	66.88	67.26	68.30	67.94	67.35
9	66.11	65.82	66.15	67.19	68.59	68.38	66.88	66.78	66.99	68.56	68.08	67.31
10	65.97	65.82	66.85	67.42	68.02	68.22	66.93	66.68	67.02	68.63	67.56	67.26
11	65.98	65.74	67.02	67.49	68.16	68.19	66.91	66.43	66.98	68.62	67.50	67.40
12	66.00	65.85	67.75	68.46	68.07	68.24	66.99	66.93	67.19	68.82	67.48	67.26
13	65.91	65.78	67.63	69.50	68.18	68.38	---	66.67	67.00	68.58	67.65	67.23
14	66.09	65.86	67.90	68.84	67.92	68.38	---	66.61	66.96	68.64	67.66	67.22
15	66.02	65.48	67.19	68.82	67.91	68.62	---	66.72	66.54	68.54	67.65	67.35
16	65.87	65.93	67.50	68.51	68.02	68.08	---	66.64	67.55	68.52	67.70	67.28
17	66.12	65.81	66.76	68.44	68.32	68.57	---	66.62	66.92	68.72	67.58	67.17
18	65.95	65.95	66.32	68.30	68.48	68.44	---	66.64	66.86	68.56	67.83	67.34
19	66.05	65.96	66.36	68.30	68.30	68.42	---	66.71	67.08	68.70	67.82	67.50
20	65.95	65.84	66.45	68.47	68.23	68.38	---	66.76	67.15	68.25	67.73	67.39
21	65.95	66.04	66.45	68.42	68.24	68.06	---	66.80	67.05	68.92	67.65	67.32
22	66.07	66.01	66.86	68.36	68.05	67.58	---	66.74	67.27	68.33	67.66	67.28
23	66.00	65.77	66.93	68.53	68.28	67.08	66.96	66.68	67.28	68.24	67.62	66.33
24	65.93	65.92	66.90	68.37	68.01	67.44	67.12	66.86	67.46	68.05	67.66	67.61
25	65.73	65.77	66.98	67.77	68.00	66.65	67.20	66.98	67.57	67.89	67.88	67.27
26	65.72	65.97	66.96	67.64	68.33	66.86	67.12	67.02	67.48	67.81	67.70	66.80
27	65.80	65.74	66.98	67.86	68.26	67.04	67.35	66.98	67.63	68.04	67.63	67.20
28	65.51	66.01	67.32	67.83	67.92	67.20	67.09	66.87	67.62	67.69	67.67	67.28
29	65.77	66.03	67.26	67.90	67.91	67.23	66.87	67.21	67.62	67.69	67.61	67.47
30	65.82	65.69	67.28	68.08	---	67.14	66.79	67.02	67.63	67.74	67.78	67.27
31	65.70	---	67.38	68.28	---	67.28	---	66.81	---	67.60	67.81	---
TOTAL	2046.77	1975.14	2070.72	2104.45	1977.55	2105.18	---	2070.59	2015.55	2113.15	2099.92	2019.33
MEAN	66.02	65.84	66.80	67.89	68.19	67.91	---	66.79	67.19	68.17	67.74	67.31
MAX	66.67	66.04	67.90	69.50	68.59	68.62	---	67.21	67.63	68.92	68.08	67.66
MIN	65.51	65.48	65.89	66.55	67.91	66.65	---	66.43	66.54	67.58	67.48	66.33

06339100 KNIFE RIVER AT MANNING, ND

LOCATION.--Lat 47°14'10", long 102°46'10", in SE¼NW¼ sec.6, T.143 N., R.95 W., Dunn County, Hydrologic Unit 10130201, on left bank 50 ft (15 m) downstream from bridge on State Highway 22, and 0.4 mi (0.6 km) north of Manning.

DRAINAGE AREA.--205 mi² (531 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,156.55 ft (657.316 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--13 years, 24.4 ft³/s (0.691 m³/s) 17,680 acre-ft/yr (21.8 hm³/yr); median of yearly mean discharges, 28 ft³/s (0.79 m³/s), 20,300 acre-ft/yr (25 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 2,940 ft³/s (83.3 m³/s) June 15, 1970, gage height, 16.20 ft (4.938 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,150 ft³/s (32.6 m³/s) June 12, gage height, 13.91 ft (4.240 m), only peak above base of 300 ft³/s (8.50 m³/s); minimum daily discharge, 0.02 ft³/s (0.001 m³/s) July 23-25, Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.64	.91	1.3	1.6	1.0	1.2	27	1.3	.26	.48	.02	.36
2	.70	.91	1.2	1.5	1.0	1.2	23	1.2	.25	.39	.03	.27
3	1.1	.91	1.3	1.4	1.0	1.3	21	1.2	.29	.39	.04	.28
4	1.4	1.2	1.4	1.4	1.0	1.2	15	1.2	.32	.26	.05	.26
5	1.2	1.4	1.7	1.3	1.1	1.1	13	1.2	.41	.14	.08	.30
6	.99	1.2	1.9	1.3	1.2	1.1	13	1.1	.46	.20	.06	.51
7	.91	1.2	2.0	1.2	1.3	1.1	10	.99	.56	.17	.06	.31
8	.91	1.2	1.9	1.2	1.3	1.1	11	.79	3.8	.17	.05	.12
9	.91	1.2	1.6	1.1	1.3	1.3	14	.75	3.8	.17	.16	.16
10	.91	1.2	1.7	1.1	1.3	1.6	11	.75	2.2	.17	1.2	.14
11	1.2	1.2	1.8	1.1	1.2	1.3	11	.75	80	.10	.42	.14
12	1.5	1.2	1.6	1.1	1.2	1.2	8.8	.68	194	.10	.32	.14
13	1.5	1.2	1.6	1.1	1.1	1.2	6.4	.64	54	.10	.23	.10
14	1.4	1.3	1.5	1.2	1.1	1.5	6.1	.64	37	.08	.17	.08
15	1.2	1.3	1.5	1.3	1.1	2.5	5.2	.63	24	.07	.15	.05
16	1.1	1.5	1.4	1.4	1.0	5.3	4.9	.63	40	.07	.31	.17
17	2.5	1.6	1.3	1.5	1.0	6.9	4.5	.63	43	.05	.64	.30
18	1.7	1.7	1.4	1.6	1.0	5.6	3.8	.53	17	.03	.62	.32
19	1.5	1.6	1.5	1.6	1.0	34	3.6	.52	8.3	.04	.41	.26
20	1.5	1.6	1.6	1.6	1.0	56	3.4	.72	5.2	.05	.31	.23
21	1.6	1.6	1.7	1.6	1.0	52	3.1	.52	3.2	.05	.26	.36
22	1.2	1.5	1.7	1.6	1.0	40	3.2	.32	2.4	.03	.24	.42
23	1.4	1.4	1.7	1.6	1.0	32	2.8	.26	1.6	.02	.14	.84
24	1.1	1.4	1.6	1.7	1.0	22	2.8	.23	1.2	.02	.10	.77
25	.99	1.4	1.6	1.7	1.0	14	2.1	.20	1.1	.02	.10	.23
26	.77	1.4	1.6	1.5	1.0	12	2.1	.20	.99	.03	.08	.39
27	.99	1.4	1.6	1.3	1.1	13	1.9	.17	.64	.05	.08	.42
28	.91	1.4	1.6	1.2	1.2	18	1.5	.15	.48	.06	.08	.26
29	.91	1.4	1.6	1.1	1.3	26	1.3	.23	.45	.05	.11	1.5
30	.91	1.4	1.6	1.1	---	25	1.3	.29	.45	.07	.15	1.2
31	.91	---	1.6	1.1	---	23	---	.26	---	.04	.33	---
TOTAL	36.46	39.83	49.1	42.1	31.8	404.7	237.8	19.68	527.36	3.67	7.00	10.89
MEAN	1.18	1.33	1.58	1.36	1.10	13.1	7.93	.63	17.6	.12	.23	.36
MAX	2.5	1.7	2.0	1.7	1.3	56	27	1.3	194	.48	1.2	1.5
MIN	.64	.91	1.2	1.1	1.0	1.1	1.3	.15	.25	.02	.02	.05
AC-FT	72	79	97	84	63	803	472	39	1050	7.3	14	22

CAL YR 1979 TOTAL 11654.69 MEAN 31.9 MAX 1300 MIN .17 AC-FT 23120
WTR YR 1980 TOTAL 1410.39 MEAN 3.85 MAX 194 MIN .02 AC-FT 2800

06339100 KNIFE RIVER AT MANNING, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE, WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)
OCT												
04...	1445	1.5	2040	8.1	24.0	10.0	2.6	25	59	160	290	0
23...	1540	1.2	2010	--	17.0	5.0	--	--	--	--	--	--
NOV												
09...	1415	1.1	2450	8.3	4.0	1.5	10.6	80	K16	68	340	0
21...	0955	1.4	2800	--	.0	.5	--	--	--	--	--	--
DEC												
18...	1650	1.7	2710	8.1	-8.0	.0	11.0	82	24	86	330	0
19...	1045	1.5	3030	--	--	1.0	--	--	--	--	--	--
JAN												
15...	1215	1.3	3190	[illegible]	9.0	.0	7.6	55	150	73	410	0
25...	1355	1.7	3600	--	.0	.0	--	--	--	--	--	--
FEB												
08...	0920	1.3	3350	8.0	-8.0	.0	8.0	50	K3	97	420	0
MAR												
07...	1400	1.1	2000	--	1.0	.5	--	--	--	--	--	--
21...	1010	55	965	--	3.5	1.0	--	--	--	--	--	--
26...	0830	12	860	7.5	5.0	.5	12.2	89	K2	91	110	0
APR												
02...	1140	23	1020	--	4.0	1.5	--	--	--	--	--	--
15...	1100	5.4	1060	8.2	10.5	4.5	11.1	93	63	59	120	0
23...	1410	2.0	1300	--	--	14.0	--	--	--	--	--	--
MAY												
06...	1200	.99	1570	8.2	15.0	14.5	7.7	81	164	210	220	0
23...	1205	.22	1800	8.0	30.0	23.0	--	--	--	--	270	0
JUN												
03...	1100	.23	2130	8.4	23.0	17.5	6.2	70	--	--	300	0
13...	1155	56	1300	8.6	22.0	19.5	--	--	--	--	190	0
26...	1245	1.0	1000	--	15.0	18.0	--	--	--	--	--	--
JUL												
09...	1120	.23	1390	8.2	26.0	19.0	5.7	66	--	--	190	0
25...	1335	.02	2110	--	26.0	22.5	--	--	--	--	--	--
AUG												
13...	0900	.26	1300	7.8	18.0	17.5	5.7	65	150	200	210	0
20...	1125	.31	1200	--	15.0	18.5	--	--	--	--	--	--
27...	1410	.40	1620	--	23.5	16.0	--	--	--	--	--	--
SEP												
09...	0815	.16	1300	8.4	12.5	12.5	5.5	55	230	860	200	0
23...	1355	.51	1500	--	--	14.0	--	--	--	--	--	--

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT												
04...	63	32	380	73	9.7	11	727	0	596	9.2	530	7.5
23...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
09...	75	38	480	75	11	11	827	0	678	6.6	660	8.4
21...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
18...	61	43	570	80	14	9.2	946	0	775	12	790	10
19...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
15...	79	52	650	77	14	10	1150	0	943	18	900	9.6
25...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
08...	81	54	630	76	13	9.6	1180	0	968	19	930	11
MAR												
26...	26	12	150	73	6.9	11	217	0	178	11	250	5.8
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
15...	26	14	180	75	7.1	6.3	320	0	262	3.2	300	5.5
23...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
06...	46	26	310	74	10	8.5	532	0	436	5.4	430	6.9
23...	56	32	380	75	10	8.0	687	0	563	11	530	10
JUN												
03...	62	36	410	74	10	11	780	7	651	5.1	500	7.2
13...	39	23	260	74	8.2	8.5	443	0	363	1.0	300	7.7
26...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
09...	40	21	260	74	8.2	11	488	0	400	4.8	340	4.3
25...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
13...	45	23	250	71	7.6	10	527	0	432	13	330	5.0
SEP												
09...	42	24	220	69	6.7	13	495	2	410	3.2	310	5.1

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339100 KNIFE RIVER AT MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
04...	.8	8.5	1410	1390	1.92	5.71	.02	--	.090	.11	1.1	1.2
23...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
06...	.9	9.8	1660	1690	2.26	4.93	.01	.01	.020	.02	.98	1.0
21...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
10...	.8	5.9	1950	1960	2.65	8.95	.15	.10	.060	.07	.89	.95
19...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
15...	.9	9.5	2240	2280	3.05	7.86	.16	.16	.160	.19	1.5	1.7
25...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
08...	.9	13	2400	2310	3.26	8.42	.47	.39	.110	.13	.89	1.0
MAR												
07...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
26...	.3	6.2	586	568	.80	19.0	.20	.19	.150	.18	1.8	1.9
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
15...	.4	5.7	725	696	.99	10.6	.03	.03	.100	.12	.64	.76
23...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
06...	.6	5.0	1040	1100	1.41	2.78	.05	.06	.060	.07	1.0	1.1
23...	.7	5.2	1380	1360	1.88	.82	--	--	--	--	--	--
JUN												
03...	.7	7.1	1480	1510	2.01	.92	.03	.05	.270	.33	1.1	1.4
13...	.5	6.0	961	944	1.31	146	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
09...	.8	9.3	927	928	1.26	.58	.00	.00	.250	.30	1.4	1.6
25...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
13...	.4	5.7	958	929	1.30	.67	.00	.00	.040	.05	.83	.87
20...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	.6	2.0	883	864	1.20	.38	.00	.00	.000	.00	1.3	1.3
23...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA) (01006)
OCT											
04...	1.2	5.4	.070	.21	.010	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	1.0	4.5	.050	.15	.010	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
10...	1.1	4.9	.050	.15	.010	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	1.9	8.2	.060	.18	.010	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
08...	1.5	6.5	.050	.15	.010	--	--	--	--	--	--
MAR											
07...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	2.1	9.3	.250	.77	.170	90	2	1	56	100	60
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
15...	.77	3.4	.110	.34	.140	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	1.2	5.1	.100	.31	.100	30	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	1.4	6.3	.150	.46	.050	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	1.6	7.1	.150	.46	.020	30	5	2	53	100	8
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	.87	3;9	.080	.25	.050	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	1.3	5.8	.080	.25	.060	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--

06339100 KNIFE RIVER AT MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT											
04...	--	--	--	--	--	--	540	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	550	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
10...	--	--	--	--	--	--	600	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	760	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
08...	--	--	--	--	--	--	830	--	--	--	--
MAR											
07...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	40	240	0	0	<1	1	250	0	0	0	4
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	270	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	70	--	--	--	<1	--	420	--	--	0	--
23...	--	--	--	--	--	--	390	--	--	--	--
JUN											
03...	--	--	--	--	--	--	550	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	100	5800	0	--	<1	1	360	20	20	0	7
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	--	--	--	--	--	--	370	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	370	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT											
04...	--	--	--	--	--	--	--	--	130	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	--	--	470	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
10...	--	--	--	--	--	--	--	--	90	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	--	--	60	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
08...	--	--	--	--	--	--	--	--	60	--	--
MAR											
07...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	1	0	<3	20	7	0	<10	8	290	20	6
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	250	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	--	--	<3	--	--	--	<10	--	90	--	--
23...	--	--	--	--	--	--	--	--	80	--	--
JUN											
03...	--	--	--	--	--	--	--	--	60	--	--
13...	--	--	--	--	--	--	--	--	30	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	2	--	<3	20	5	--	<10	14	26	30	9
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	--	--	--	--	--	--	--	--	110	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	--	--	90	--	--
23...	--	--	--	--	--	--	--	--	--	--	--

06339100 KNIFE RIVER AT MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
MAR											
07...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	14	110	40	66	.8	.5	.3	.06	1	0	<10
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	36	--	--	35	--	.5	--	--	--	--	<10
23...	--	--	--	180	--	--	--	--	--	--	--
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	20	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	21	290	130	160	.2	.1	.1	.05	4	--	<10
25...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
MAR											
07...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
26...	0	7	3	4	20	0	0	0	0	210	<6.0
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	--	--	--	4	--	--	--	0	--	510	<6.0
23...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	0	5	0	6	30	0	0	0	0	510	<6.0
25...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
MAR							
26...	50	50	4	24	<8.1	2.5	9.6
APR							
15...	--	--	--	--	--	--	--
MAY							
06...	--	--	<3	--	--	--	--
JUN							
03...	--	--	--	--	--	--	--
JUL							
09...	40	--	<3	32	<15	1.5	12
AUG							
13...	--	--	--	--	--	--	--
SEP							
09...	--	--	--	--	--	--	--

06339100 KNIFE RIVER AT MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT							
08...	--	--	--	30	1.0	43	.17
NOV							
06...	--	--	--	33	.2	49	.15
DEC							
10...	--	--	--	35	1.0	83	.38
JAN							
15...	--	--	--	36	.9	71	.25
FEB							
08...	--	--	--	24	.7	55	.19
MAR							
26...	2.0	9.9	2.0	31	--	41	1.3
APR							
15...	--	--	--	11	1.1	47	.69
MAY							
06...	--	--	--	27	--	61	.16
JUN							
03...	--	--	--	110	1.4	107	.07
JUL							
09...	2.2	12	2.0	22	2.1	38	.02
AUG							
13...	--	--	--	43	.6	13	.01
SEP							
09...	--	--	--	20	.3	11	.00

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAR										
26...	6	11	25	46	51	60	77	89	96	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
NOV					
06...	33	4.00	1.08	3.31	4.02
AUG					
27...	49	14.1	4.27	4.17	5.98

06339100 KNIFE RIVER AT MANNING, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 4,79		NOV 6,79		DEC 10,79		JAN 18,80		FEB 8,80		MAR 26,80	
TIME	1445		1015		1650		1215		0920		0830	
TOTAL CELLS/ML	55000		24000		5700		3500		320		300000	
DIVERSITY: DIVISION	0.1		1.0		1.3		1.6		1.8		0.0	
.CLASS	0.1		1.0		1.3		1.6		1.8		0.0	
..ORDER	0.2		1.0		1.3		1.8		2.3		0.0	
...FAMILY	0.2		1.2		1.3		2.0		2.8		0.0	
....GENUS	0.2		1.4		1.3		2.0		2.8		0.0	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	--	-
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	54000#	98	17000#	69	1200#	21	810#	23	110#	35	*	0
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	800	3	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	800	3	--	-	--	-	20	6	--	-
....TETRASTRUM	--	-	--	-	--	-	130	4	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	720	1	--	-	--	-	--	-	10	3	--	-
...VOLVOCACEAE												
....PANDORINA	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	360	1	--	-	930#	16	870#	25	40	13	--	-
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	5	2	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....DIPLONEIS	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	--	-	--	-	--	-	10	3	--	-
...NITZSCHIACEAE												
....NITZSCHIA	--	-	--	-	--	-	97	3	25	8	--	-
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	32	1	5	2	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	1800	7	--	-	--	-	--	-	--	-
...OCHROMONADACEAE												
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06339100 KNIFE RIVER AT MANNING, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	OCT 4,79		NOV 6,79		DEC 10,79		JAN 18,80		FEB 8,80		MAR 26,80	
TIME	1445		1015		1650		1215		0920		0830	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	4000#	17	--	-	--	-	--	-	--	-
....DACTYLOCOCCOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
....ANABAENOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	300000#	100
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	32	1	5	2	--	-
....LEPOCINCLIS	--	-	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	3600#	63	1500#	42	40	13	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	45	14	--	-
..PERIDINIALES												
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	32	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339100 KNIFE RIVER AT MANNING, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 15,80		MAY 6,80		JUN 3,80		JUL 9,80		AUG 13,80		SEP 9,80	
TIME	1100		1200		1100		1120		0900		0815	
TOTAL CELLS/ML	4600		7000		13000		1300		5900		620	
DIVERSITY: DIVISION	1.2		1.7		1.5		1.8		0.7		1.6	
.CLASS	1.2		1.9		1.5		1.8		0.7		1.6	
..ORDER	1.9		2.0		2.0		2.2		0.7		2.2	
...FAMILY	2.0		2.7		2.3		2.5		0.8		2.5	
....GENUS	2.2		3.7		2.5		2.9		1.0		2.5	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	47	1	--	-	--	-	--	-	13	2
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	180	3	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	430	9	1300#	19	780	6	39	3	--	-	--	-
....CHODATELLA	--	-	47	1	--	-	--	-	*	0	--	-
....DICTYOSPHAERIUM	--	-	660	9	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	47	1	300	2	--	-	--	-	--	-
....OOCYSTIS	160	3	190	3	--	-	--	-	52	1	210#	33
....SELENASTRUM	--	-	--	-	--	-	--	-	*	0	--	-
....TETRAEDRON	--	-	--	-	--	-	13	1	--	-	--	-
....TREUBARIA	--	-	47	1	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	190	3	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	170	1	--	-	100	2	--	-
....SCENEDESMUS	--	-	1000	15	610	5	--	-	230	4	--	-
....TETRASTRUM	--	-	190	3	--	-	--	-	100	2	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	1600#	35	47	1	130	1	190	15	--	-	26	4
...VOLVOCACEAE												
....PANDORINA	--	-	--	-	--	-	100	8	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	330	5	1300	10	26	2	39	1	13	2
....MELOSIRA	--	-	--	-	--	-	26	2	--	-	--	-
....STEPHANODISCUS	1900#	41	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	47	1	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	13	2
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	--	-	--	-	13	2
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	39	1	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....DIPLONEIS	--	-	--	-	87	1	--	-	--	-	--	-
....NAVICULA	39	1	47	1	260	2	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	230	5	240	3	650	5	52	4	39	1	13	2
...SURIRELLACEAE												
....SURIRELLA	39	1	--	-	--	-	13	1	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	710	10	--	-	--	-	--	-	--	-
...OCHROMONADACEAE												
....OCHROMONAS	--	-	94	1	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	87	1	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06339100 KNIFE RIVER AT MANNING, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	APR 15,80		MAY 6,80		JUN 3,80		JUL 9,80		AUG 13,80		SEP 9,80	
TIME	1100		1200		1100		1120		0900		0815	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	120	3	710	10	650	5	90	7	5100#	86	77	13
....DACTYLOCOCCOPSIS	78	2	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	210#	33
....ANABAENOPSIS	--	-	--	-	--	-	170	13	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	7000#	56	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	570	8	260	2	440#	34	*	0	39	6
....LEPOCINCLIS	--	-	47	1	--	-	--	-	--	-	--	-
....PHACUS	--	-	280	4	87	1	--	-	--	-	--	-
....TRACHELOMONAS	--	-	140	2	130	1	140	11	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES												
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339180 STRAY CREEK NEAR MANNING, ND

LOCATION.--Lat 47°12'47", long 102°37'22", in SW¼SE¼SW¼ sec.8, T.143 N., R.94 W., Dunn County, Hydrologic Unit 10130201, on left bank 200 ft (61 m) upstream from bridge on county road, 6.9 mi (11.1 km) east of Manning and 3.0 mi (4.8 km) above mouth.

DRAINAGE AREA.--30.3 mi^2 (78.4 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,090 ft (637 m), from topographic map. Prior to Oct. 1, 1979 at datum 10.00 ft (3.048 m) lower.

REMARKS.--Records good except those above 30 ft^3/s (0.85 m^3/s), which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 241 ft^3/s (6.83 m^3/s) June 12, 1980, from rating curve extended above 60 ft^3/s (1.70 m^3/s), gage height, 13.38 ft (4.078 m), no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 241 ft^3/s (6.83 m^3/s) June 12, from rating curve extended above 60 ft^3/s (1.70 m^3/s), gage height, 13.38 ft (4.078 m), only peak above base of 30 ft^3/s (0.85 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.01	.00	.00	1.9	.07	.00	.00	.00	.00
2	.00	.00	.00	.01	.00	.00	1.4	.07	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	1.1	.07	.00	.00	.00	.00
4	.00	.00	.02	.00	.00	.00	.98	.06	.00	.00	.00	.00
5	.00	.00	.08	.00	.00	.00	.91	.05	.00	.00	.00	.00
6	.00	.00	.07	.00	.00	.00	1.0	.04	.00	.00	.00	.00
7	.00	.00	.06	.00	.00	.00	1.6	.04	.00	.00	.00	.00
8	.00	.00	.04	.00	.00	.00	2.5	.04	.00	.00	.00	.00
9	.00	.01	.05	.00	.00	.00	1.8	.03	.00	.00	.00	.00
10	.00	.02	.07	.00	.00	.00	1.1	.03	.00	.00	.00	.00
11	.00	.02	.10	.00	.00	.00	.88	.02	.44	.00	.00	.00
12	.00	.03	.06	.00	.00	.00	.73	.02	46	.00	.00	.00
13	.00	.04	.06	.00	.00	.00	.58	.01	9.9	.00	.00	.00
14	.00	.04	.04	.00	.00	.00	.47	.01	4.2	.00	.00	.00
15	.00	.05	.05	.00	.00	.02	.40	.01	2.4	.00	.00	.00
16	.00	.06	.02	.00	.00	.01	.40	.00	2.0	.00	.00	.00
17	.00	.07	.01	.00	.00	.01	.38	.00	1.3	.00	.00	.00
18	.00	.08	.02	.00	.00	.01	.34	.00	.77	.00	.00	.00
19	.00	.09	.03	.00	.00	.02	.30	.00	.34	.00	.00	.00
20	.00	.10	.03	.00	.00	2.0	.28	.00	.15	.00	.00	.00
21	.00	.10	.04	.00	.00	2.0	.30	.00	.07	.00	.00	.00
22	.00	.09	.04	.00	.00	1.6	.25	.00	.04	.00	.00	.00
23	.00	.06	.02	.00	.00	1.2	.18	.00	.03	.00	.00	.00
24	.00	.04	.02	.00	.00	.90	.15	.00	.02	.00	.00	.00
25	.00	.03	.01	.00	.00	.70	.14	.00	.01	.00	.00	.00
26	.00	.02	.01	.00	.00	.55	.14	.00	.00	.00	.00	.00
27	.00	.02	.03	.00	.00	.70	.10	.00	.00	.00	.00	.00
28	.00	.01	.03	.00	.00	.90	.08	.00	.00	.00	.00	.00
29	.00	.01	.02	.00	.00	1.3	.07	.00	.00	.00	.00	.00
30	.00	.00	.02	.00	---	1.8	.07	.00	.00	.00	.00	.00
31	.00	---	.01	.00	---	2.0	---	.00	---	.00	.00	---
TOTAL	.00	.99	1.06	.02	.00	15.72	20.53	.57	67.67	.00	.00	.00
MEAN	.000	.033	.034	.001	.000	.51	.68	.018	2.26	.000	.000	.000
MAX	.00	.10	.10	.01	.00	2.0	2.5	.07	46	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00
AC-FT	.00	2.0	2.1	.04	.00	31	41	1.1	134	.00	.00	.00

CAL YR 1979 TOTAL 517.46 MEAN 1.42 MAX 70 MIN .00 AC-FT 1030
WTR YR 1980 TOTAL 106.56 MEAN .29 MAX 46 MIN .00 AC-FT 211

06339180 STRAY CREEK NEAR MANNING, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE, WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)
DEC 10...	1445	.07	5430	8.6	-1.5	.0	13.4	100	33	2000	920	170
MAR 21...	1600	2.0	2550	8.0	3.5	.5	8.0	58	K9	K2000	370	0
APR 15...	0805	.41	2190	8.3	5.5	6.0	11.0	96	K7	130	350	0
MAY 06...	0900	.04	3400	8.4	13.0	12.0	8.9	90	K14	55	540	0
JUN 12...	1630	20	1070	7.5	33.0	20.0	2.6	31	>2000	>10000	210	120
13...	0730	12	--	--	--	18.0	--	--	--	--	--	--

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
DEC 10...	73	180	1100	72	16	19	832	43	754	3.7	2500	14
MAR 21...	46	61	480	73	13	18	483	0	396	7.7	1000	7.7
APR 15...	48	57	420	71	9.7	8.7	461	0	378	3.7	840	5.9
MAY 06...	67	90	670	72	15	15	783	7	654	5.1	1300	9.2
JUN 12...	36	30	140	57	4.7	11	112	0	92	5.7	440	3.9
13...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
DEC 10...	.6	2.7	4360	434(	5.93	.82	.10	.07	.41	.50	2.6	3.0
MAR 21...	.3	9.8	1930	187(	2.62	10.4	.34	.43	.65	.79	2.3	2.9
APR 15...	.4	7.6	1610	162(	2.19	1.78	.02	.02	.08	.10	1.2	1.3
MAY 06...	.5	1.6	2650	255(	3.60	.29	.01	.02	.07	.08	1.3	1.4
JUN 12...	.1	5.6	755	72:	1.03	41.0	.60	.00	.53	.64	7.6	8.1
13...	--	--	--	--	--	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339180 STRAY CREEK NEAR MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)
DEC 10...	3.1	14	.160	.49	.080	--	--	--	--	--	--
MAR 21...	3.2	14	.600	1.8	.470	80	3	0	14	0	0
APR 15...	1.3	5.8	.130	.40	.070	--	--	--	--	--	--
MAY 06...	1.4	6.2	.120	.37	.090	10	4	0	13	100	50
JUN 12...	8.7	39	.840	2.6	.110	100	9	6	40	400	300
13...	--	--	--	--	--	--	--	--	--	--	--

DATE	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, SUSPENDED RECOV. (UG/L AS BE) (01011)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)
DEC 10...	--	--	--	--	--	--	980	--	--	--	--
MAR 21...	50	140	0	0	<3	1	620	0	0	0	10
APR 15...	--	--	--	--	--	--	520	--	--	--	--
MAY 06...	50	200	0	--	<3	1	870	0	0	0	8
JUN 12...	130	200	0	--	<1	1	390	20	20	0	15
13...	--	--	--	--	--	--	--	--	--	--	--

DATE	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM SUSPENDED RECOVERABLE (UG/L AS LI) (01131)
DEC 10...	--	--	--	--	--	--	--	--	[illegible]	--	--
MAR 21...	3	0	<8	0	31	1	30	25	330	60	0
APR 15...	--	--	--	--	--	--	--	--	90	--	--
MAY 06...	3	--	<8	20	4	--	<25	21	47	90	3
JUN 12...	15	--	<3	10	31	--	<10	27	150	40	30
13...	--	--	--	--	--	--	--	--	--	--	--

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, SUSPENDED RECOV. (UG/L AS MO) (01061)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)
DEC 10...	--	--	--	--	--	--	--	--	--	--	--
MAR 21...	78	410	10	400	.3	.1	.2	.06	2	0	<25
APR 15...	--	--	--	--	--	--	--	--	--	--	--
MAY 06...	87	70	10	60	.5	.3	.2	.06	3	--	<25
JUN 12...	14	670	510	160	.3	.0	.3	.06	2	--	<10
13...	--	--	--	--	--	--	--	--	--	--	--

06339180 STRAY CREEK NEAR MANNING, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
DEC 10...	--	--	--	--	--	--	--	--	--	--	--
MAR 21...	2	13	11	2	40	0	0	0	0	1200	9.0
APR 15...	--	--	--	--	--	--	--	--	--	--	--
MAY 06...	2	12	7	5	40	0	0	0	0	1400	<8.0
JUN 12...	7	37	32	5	30	2	1	1	0	470	<6.0
13...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)
DEC 10...	--	--	--	--	--	--	--	--	--
MAR 21...	30	0	33	55	<26	<1.2	17	1.9	18
APR 15...	--	--	--	--	--	--	--	--	--
MAY 06...	20	--	<8	40	<26	<.4	<18	.4	<18
JUN 12...	310	310	4	60	<9.5	55	20	43	19
13...	--	--	--	--	--	--	--	--	--

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
DEC 10...	--	46	1.5	30	.01	--	--	--
MAR 21...	2.0	34	--	56	.30	--	--	--
APR 15...	--	17	.9	19	.02	--	--	--
MAY 06...	.4	38	.7	46	.00	--	--	--
JUN 12...	41	22	15	1030	56	97	98	100
13...	--	--	--	759	25	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAR 21...	21	29	36	41	44	59	82	94	99	100
MAY 06...	16	23	30	35	37	48	67	88	96	100
JUN 12...	25	30	36	41	42	54	75	94	100	--

06339180 STRAY CREEK NEAR MANNING, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO JUNE 1980

DATE TIME	DEC 10,79 1445	MAR 21,80 1600	APR 15,80 0805	MAY 6,80 0900	JUN 12,80 1630
TOTAL CELLS/ML	15000	130	10000	910	2700
DIVERSITY: DIVISION	0.3	0.8	0.4	1.0	1.3
.CLASS	0.3	0.8	0.4	1.0	1.3
..ORDER	1.0	1.1	0.7	1.2	1.6
...FAMILY	1.1	2.0	0.8	2.4	1.9
....GENUS	1.3	2.0	0.8	2.7	1.9

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	--	-	55	6	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	2000	14	25#	19	*	0	41	5	220	8
....CHLORELLA	680	5	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	210#	23	--	-
....KIRCHNERIELLA	140	1	--	-	--	-	41	5	--	-
....TREUBARIA	--	-	--	-	520	5	--	-	--	-
...SCENEDESMACEAE										
....SCENEDESMUS	270	2	10	8	75	1	--	-	--	-
..ULOTRICHALES										
...MICROSPORACEAE										
....MICROSPORA	--	-	--	-	9100#	87	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	11000#	75	--	-	94	1	--	-	72	3
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	140	1	5	4	*	0	55	6	140	5
..PENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	--	-	--	-	97	11	--	-
...FRAGILARIACEAE										
....SYNEDRA	140	1	20#	15	--	-	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	28	3	--	-
...NAVICULACEAE										
....NAVICULA	--	-	5	4	--	-	14	2	72	3
...NITZSCHIACEAE										
....NITZSCHIA	--	-	65#	50	--	-	320#	35	650#	24
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	55	6	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	*	0	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..HORMOGONALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	560	5	--	-	1400#	54
...RIVULARIACEAE										
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	72	3
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	270	2	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339500 KNIFE RIVER AT MARSHALL, ND

LOCATION.--Lat 47°08'17", long 102°20'00", NW¼ sec.10, T.142 N., R.92 W., Dunn County, Hydrologic Unit 10130201, and on right bank 250 ft (75 m) downstream from bridge on State Highway 8 in Marshall.

DRAINAGE AREA.--722 mi² (1,870 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records good except for the winter period, which are fair.

AVERAGE DISCHARGE.--10 years, 71.8 ft³/s (2.033 m³/s), 52,020 acre-ft/yr (64.1 hm³/yr); median of yearly mean discharges, 71 ft³/s (2.01 m³/s), 51,400 acre-ft/yr (63 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,080 ft³/s (257 m³/s) Mar. 14, 1972, gage height, 19.77 ft (5.956 m); minimum, 0.18 ft³/s (0.005 m³/s) July 19, 20, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1947 reached a stage of at least 18.5 ft (5.639 m) prior to dike construction and is believed to be highest stage experienced since 1915.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,800 ft³/s (51.0 m³/s) June 13, gage height, 11.49 ft (3.502 m); only peak above base of 750 ft³/s (21.2 m³/s); minimum daily discharge, 0.36 ft³/s (0.010 m³/s) Sept. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]

06339500 KNIFE RIVER AT MARSHALL, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	--	--	--	--	--	--
NOV												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	--	--	--	--	--	--
DEC												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	--	--	--	--	--	--
JAN												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	--	--	--	--	--	--
FEB												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR												
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	--	--	--	--	--	--
APR												
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--	--	--	--	[illegible]
MAY												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	[illegible]	[illegible]
JUN												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	--	--	--	--	[illegible]	[illegible]
JUL												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	--	--	--	--	--	--
AUG												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	--	--	--	--	--	--
SEP												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DEC												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FEB												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUN												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
[illegible]...	.6	11	1040	1050	2.83	25.7	.00	.01	.120	.15	.67	.79
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
[illegible]...	.7	10	2120	2150	2.88	25.5	.11	.08	.080	.08	.91	.96
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
[illegible]...	.9	15	2300	2020	3.13	37.8	.18	.19	.140	.19	.69	.83
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
[illegible]...	1.0	15	2560	2500	3.48	31.1	.35	.37	.230	.30	.57	.80
MAR												
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
[illegible]...	.5	10	1810	1770	2.46	105	.34	.36	.100	.13	1.7	1.8
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
[illegible]...	.5	5.6	1100	1070	1.50	93.5	.02	.03	.060	.07	.76	.82
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
[illegible]...	.6	8.2	1470	1470	2.00	80.6	.03	.04	.060	.07	1.0	1.1
[illegible]...	.7	8.9	1540	1500	2.10	16.0	--	--	--	--	--	--
JUN												
[illegible]...	.3	8.6	590	600	.80	1790	--	--	--	--	--	--
[illegible]...	.6	10	577	564	.78	180	.06	.06	.010	.76	0.6	0.8
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
[illegible]...	.5	8.0	1300	1270	1.80	5.30	.03	.04	.100	.08	1.7	1.7
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
[illegible]...	.6	9.0	1400	1380	1.90	10.0	.00	.00	.060	.11	1.1	1.2
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
[illegible]...	.6	6.5	1600	1550	2.20	7.60	.00	.00	.000	.00	1.1	1.1
[illegible]...	.6	6.0	1570	1610	2.10	1.60	.00	.00	.000	.00	1.0	1.1

[illegible]

06339500 KNIFE RIVER AT MARSHALL, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT											
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	--	--	390	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
DEC											
11...	--	--	--	--	--	--	660	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
JAN											
23...	--	--	--	--	--	--	550	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
FEB											
19...	--	--	--	--	--	--	600	--	--	--	--
MAR											
07...	--	--	--	--	--	--	--	--	--	--	--
21...	50	90	0	0	<3	0	670	0	0	0	6
25...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	280	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
14...	--	--	--	--	--	--	590	--	--	--	--
28...	--	--	--	--	--	--	430	--	--	--	--
JUN											
10...	--	--	--	--	--	--	--	--	--	--	--
17...	95	2000	0	--	<1	0	200	60	60	0	5
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
17...	110	200	0	--	<1	1	300	10	10	0	9
28...	--	--	--	--	--	--	--	--	--	--	--
AUG											
21...	--	--	--	--	--	--	610	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	--	--	--	--	--	--	600	--	--	--	--
19...	--	--	--	--	--	--	330	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) [illegible]	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) [illegible]	COBALT, DIS-SOLVED (UG/L AS CO) [illegible]	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) [illegible]	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) [illegible]	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) [illegible]	COPPER, DIS-SOLVED (UG/L AS CU) [illegible]	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) [illegible]	IRON, DIS-SOLVED (UG/L AS FE) [illegible]	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) [illegible]	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) [illegible]
OCT											
23...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	--	--	--	--	[illegible]	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
DEC											
11...	--	--	--	--	--	--	--	--	[illegible]	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
JAN											
23...	--	--	--	--	--	--	--	--	[illegible]	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
FEB											
19...	--	--	--	--	--	--	--	--	[illegible]	--	--
MAR											
07...	--	--	--	--	--	--	--	--	--	--	--
21...	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	[illegible]	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
14...	--	--	--	--	--	--	--	--	[illegible]	--	--
28...	--	--	--	--	--	--	--	--	[illegible]	--	--
JUN											
10...	--	--	--	--	--	--	--	--	[illegible]	--	--
17...	[illegible]	--	--	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26...	--	--	--	--	--	--	--	--	--	--	--
JUL											
17...	[illegible]	--	--	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	--
28...	--	--	--	--	--	--	--	--	--	--	--
AUG											
21...	--	--	--	--	--	--	--	--	[illegible]	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	--	--	--	--	--	--	--	--	[illegible]	--	--
19...	--	--	--	--	--	--	--	--	[illegible]	--	--

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
MAR											
07...	--	--	--	--	--	--	--	--	--	--	--
21...	56	190	50	140	.2	.5	.0	.04	2	0	<25
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
14...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	10	--	--	--	--	--	--	--
JUN											
13...	--	--	--	10	--	--	--	--	--	--	--
17...	14	1200	1200	4	.2	.1	.1	.02	3	--	<10
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
17...	30	120	120	5	.2	.0	.2	.02	4	4	0
22...	--	--	--	--	--	--	--	--	--	--	--

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR											
07...	--	--	--	--	--	--	--	--	--	--	--
21...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
14...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
JUN											
13...	--	--	--	--	--	--	--	--	--	--	--
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20...	--	--	--	--	--	--	--	--	--	--	--
JUL											
17...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22...	--	--	--	--	--	--	--	--	--	--	--

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]								
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]								
[illegible]	--	--	--	--	--	--	--	--
[illegible]								
[illegible]	--	--	--	--	--	--	--	--
[illegible]								
[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]								
[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]								
[illegible]	--	--	--	--	--	--	--	--
[illegible]								
[illegible]	--	--	--	--	--	--	--	--
[illegible]	--	--	--	--	--	--	--	--

06339500 KNIFE RIVER AT MARSHALL, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)
NOV 08...	--	--	41	.3	39	.61	--	--
DEC 11...	--	--	32	.9	37	.62	--	--
JAN 23...	--	--	42	.8	56	.94	--	--
FEB 14...	--	--	17	.4	23	.20	--	--
MAR 21...	17	1.8	19	1.3	27	1.5	--	--
APR 15...	--	--	16	1.6	62	3.0	--	--
MAY 14...	--	--	12	1.0	117	1.6	--	--
JUN 17...	12	49	36	--	1910	477	91	100
JUL 17...	18	1.0	16	1.4	72	.29	--	--
AUG 21...	--	--	16	1.1	95	1.1	--	--
SEP 11...	--	--	15	.8	93	.01	--	--
SEP 19...	--	--	16	--	94	.05	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM [illegible]	BED MAT. FALL DIAM. % FINER THAN .125 MM [illegible]	BED MAT. FALL DIAM. % FINER THAN .250 MM [illegible]	BED MAT. FALL DIAM. % FINER THAN .500 MM [illegible]	BED MAT. FALL DIAM. % FINER THAN 1.00 MM [illegible]	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM [illegible]	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM [illegible]	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM [illegible]	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM [illegible]	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM [illegible]	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM [illegible]
MAR [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	100
JUN [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	100	--	--
JUL 17...	1	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	100

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

06339500 KNIFE RIVER AT MARSHALL, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 8,79		DEC 11,79		JAN 23,80		FEB 14,80		MAR 21,80		APR 15,80	
TIME	0845		1535		1430		0810		0900		1345	
TOTAL CELLS/ML	14000		19000		700		1300		3800		10000	
DIVERSITY: DIVISION	1.1		1.3		1.8		1.4		1.6		1.4	
.CLASS	1.1		1.3		1.8		1.4		1.6		1.4	
..ORDER	1.1		1.6		1.9		1.8		2.5		2.2	
...FAMILY	1.1		1.6		2.2		2.4		3.0		2.8	
....GENUS	1.7		1.7		2.3		2.7		3.3		2.9	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	[illegible]	56	[illegible]	18	99	14	[illegible]	19	[illegible]	11	[illegible]	16
....CHLORELLA	--	-	520	3	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	[illegible]	[illegible]	--	-	--	-	--	-	150	4	--	-
....KIRCHNERIELLA	720	5	--	-	--	-	--	-	[illegible]	[illegible]	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	270	2	--	-	--	-	27	2	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	22	3	110	8	--	-	--	-
....SCENEDESMUS	--	-	--	-	--	-	160	12	97	3	180	2
....TETRASTRUM	--	-	--	-	--	-	--	-	97	3	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	290	8	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	1200	6	--	-	96	7	[illegible]	[illegible]	1300	13

[illegible]

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	NOV 8,79 0845		DEC 11,79 1535		JAN 23,80 1430		FEB 14,80 0810		MAR 21,80 0900		APR 15,80 1345	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	37000#	27	--	-	--	-	55	4	310	8	810	8
....COCCOCHLORIS	--	-	--	-	--	-	--	-	240	6	--	-
....DACTYLOCOCCOPSIS	--	-	--	-	--	-	--	-	--	-	540	5
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	190	5	--	-
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-	580#	15	--	-
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	97	3	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	15	3	--	-	--	-	--	*
....TRACHELOMONAS	--	-	120000#	65	2600#	58	61	5	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	55	8	--	*	--	*	--	*

NOTE: # - DOMINANT ORGANISM, EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAY 14,80	JUN 17,80	JUL 17,80	AUG 21,80	SEP 11,80	SEP 19,80
TIME	0910	0900	0930	0810	0900	1030
TOTAL CELLS/ML	11000	8900	41000	12000	8000	9000
DIVERSITY: DIVISION	1.2	1.0	0.6	1.2	1.3	1.2
.CLASS	1.2	1.0	0.6	1.2	1.3	1.2
..ORDER	1.6	1.2	0.7	2.0	1.5	1.4
...FAMILY	2.3	2.0	1.0	2.2	2.1	1.8
....GENUS	3.1	2.5	1.1	3.1	3.0	2.3

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...MICRACTINIACEAE												
....GOLENKINIA	180	2	--	-	*	0	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-	130	2	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	1900#	17	180	2	600	1	810	7	500	6	940	10
....CHLORELLA	180	2	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	420	4	--	-	*	0	65	1	--	-	--	-
....DICTYOSPHAERIUM	1700#	16	--	-	1200	3	880	7	300	4	230	3
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	65	1	290	3	--	-
....SELENASTRUM	120	1	--	-	*	0	130	1	*	0	67	1
....TETRAEDRON	--	-	--	-	*	0	*	0	*	0	*	0
....TREUBARIA	--	-	--	-	--	-	65	1	--	-	--	-
....WESTELLA	--	-	--	-	*	0	--	-	500	6	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	200	2	--	-	*	0	260	2	780	9	2100#	24
....SCENEDESMUS	2000#	18	--	-	520	1	880	7	890	11	640	7
....TETRASTRUM	--	-	--	-	--	-	130	1	100	1	100	1
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	880	8	--	-	--	-	130	1	230	3	360	4
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	420	4	810	9	500	1	90	1	100	1	67	1
....MELOSIRA	--	-	--	-	*	0	130	1	--	-	*	0
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	180	2	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	180	2	--	-	65	1	80	1	67	1
...DIATOMACEAE												
....DIATOMA	--	-	180	2	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....[illegible]	--	-	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	180	2	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	180	2	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	60	1	540	6	--	-	*	0	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	60	1	810	9	470	1	290	2	130	2	67	1
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...[illegible]												
....[illegible]	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	*	0	--	-

NOTE: # = DOMINANT ORGANISM, EQUAL TO OR GREATER THAN 15%
* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339300 KNIFE RIVER AT MARSHALL, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	MAY 14,80 0910		JUN 17,80 0900		JUL 17,80 0930		AUG 21,80 0810		SEP 11,80 0900		SEP 19,80 1030	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	31000#	25	400	5	--	-
....ANACYSTIS	24000#	22	--	-	990	2	20000#	16	34000#	43	42000#	47
....COCCOCHLORIS	60	1	--	-	--	-	--	-	--	-	--	-
....DACTYLOCOCCOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....LYNGBYA	--	-	1100	12	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	48000#	54	340000#	85	33000#	26	--	-	--	-
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	690	8	1200	3	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	100	2	--	-	*	0	65	1	130	2	67	1
....TRACHELOMONAS	100	2	270	3	*	0	130	1	*	0	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # = DOMINANT ORGANISM, EQUAL TO OR GREATER THAN 15%
      * = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339490 ELK CREEK NEAR GOLDEN VALLEY, ND

LOCATION.--Lat 47°06'25", long 102°03'05", in NE¼NW¼ sec.23, T.142 N., R.90 W., Mercer County, Hydrologic Unit 10130201, on right bank 60 ft (18 m) upstream from highway bridge, and 13.5 mi (21.7 km) south of Golden Valley.

DRAINAGE AREA.--82 mi^2 (212 km^2), approximate).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,915.17 ft (583.744 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--13 years, 7.99 ft^3/s (0.2[illegible] m^3/s), 5,790 acre-ft/yr (7.14 hm^3/yr); median of yearly mean discharges, 5.4 ft^3/s (0.15 m^3/s), 3,900 acre-ft/yr (4.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,000 ft^3/s (283 m^3/s) May 8, 1970, gage height, 23.55 ft (7.178 m); no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.8 ft^3/s (0.11 m^3/s) Mar. 29, gage height, 4.99 ft (1.521 m), no peak above base of 100 ft^3/s (2.83 m^3/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	1.6	.71	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	1.9	.74	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	1.8	.53	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	2.0	.43	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	1.6	.29	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	1.7	.17	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	1.9	.11	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	1.9	.08	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	2.2	.04	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	2.6	.03	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	2.6	.01	.10	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	2.5	.01	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	2.0	.01	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	1.6	.00	.20	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	1.3	.00	2.6	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.78	.00	1.1	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.58	.00	.50	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.58	.00	.31	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.47	.00	.08	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.43	.00	.01	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.43	.00	.01	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.36	.00	.01	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.25	.00	.01	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.21	.00	.01	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.84	.08	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	3.0	.06	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	3.8	.06	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	3.8	.07	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	3.6	.07	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	3.7	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	[illegible]	[illegible]	[illegible]	[illegible]	.000	.000	.000
MAX	.00	.00	.00	.00	.00	[illegible]	[illegible]	.74	[illegible]	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	.00	.00	.00

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN .00 AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN .00 AC-FT [illegible]

06339490 ELM CREEK NEAR GOLDEN VALLEY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
APR										
01...	1140	1.6	1730	--	4.0	2.0	--	--	--	--
22...	1300	.40	2030	--	23.0	14.0	--	--	--	--
JUN										
26...	1100	.01	2500	8.7	23.0	19.5	310	0	50	45

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
APR										
01...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
JUN										
26...	520	78	13	16	699	0	573	2.2	860	18

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR									
01...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
JUN									
26...	.4	5.7	1900	1870	2.58	.05	[illegible]	[illegible]	[illegible]

06339500 KNIFE RIVER NEAR GOLDEN VALLEY, ND

LOCATION.--Lat 47°09'40", long 102°03'39", in SE¼ sec.34, T.143 N., R.90 W., Mercer County, Hydrologic Unit 10130201, on left bank 6 ft (2 m) downstream from highway bridge, 4.5 mi (7.2 km) downstream from Elm Creek, and 9 mi (14 km) south of Golden Valley.

DRAINAGE AREA.--1,230 mi² (3,190 km²), approximately.

PERIOD OF RECORD.--May 1903 to November 1906, April 1907 to November 1915, April 1916 to October 1919, and October 1921 to September 1924 (published as "at Broncho" or "near Broncho"), and April 1943 to current year. Monthly discharge only for some periods published in WSP 1309.

REVISED RECORDS (WATER YEARS).--WSP 1006: Drainage area. WSP 1279: 1904, 1914-19(M), 1922-24(M), 1944.

GAGE.--Water-stage recorder. Datum of gage is 1,847.13 ft (563.005 m) National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to May 1, 1946.

REMARKS.--Records good except those for the winter period, which are fair.

AVERAGE DISCHARGE.--54 years, 96.5 ft³/s (2.733 m³/s), 69,900 acre-ft/yr (86.2 hm³/yr); median of yearly mean discharges, 83 ft³/s (2.35 m³/s), 60,100 acre-ft/yr (74 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s (317 m³/s) May 9, 1970, gage height, 25.84 ft (7.876 m); maximum gage height, 26.7 ft (8.14 m) Mar. 26, 27, 1943, from floodmark; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 26, 27, 1943 reached a stage of 26.7 ft (8.14 m), from floodmark, 11,500 ft³/s (326 m³/s). The 1943 flood was the highest since 1903 according to information from local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,540 ft³/s (43.6 m³/s) June 16, gage height, 12.44 ft (3.792 m), only peak above base of 1,500 ft³/s (42.5 m³/s); minimum daily, 1.1 ft³/s (0.031 m³/s) Aug. 3-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

06339590 COYOTE CREEK NEAR ZAP, ND

LOCATION.--Lat 47°11'57", long 101°56'42", in NW¼NW¼NW¼ sec.13, T.143 N., R.89 W., Mercer County, Hydrologic Unit 10130201, on right bank 40 ft (12 m) upstream from bridge on county road 6.0 mi (9.6 km) south of Zap, and 0.8 mi (1.3 km) upstream from mouth.

DRAINAGE AREA.--65.2 mi² (169 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,809.75 ft (551.612 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for the period November to April, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,880 ft³/s (53.2 m³/s) Mar. 27, 1978, gage height, 10.87 ft (3.313 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 70 ft³/s (1.98 m³/s) Mar. 15, gage height, 6.75 ft (2.057 m), no peak above base of 75 ft³/s (2.12 m³/s); no flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	---	[illegible]	[illegible]	---	[illegible]	---	[illegible]	---	[illegible]	[illegible]	---
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] AC-FT [illegible]

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT 03...	1030	.02	--	--	11.5	11.5	--	--	--	--	--	--
NOV 07...	1315	.82	2060	8.3	-2.0	1.0	12.6	95	150	90	330	0
DEC 12...	1050	.46	2520	8.3	-4.0	.0	12.4	91	K13	220	370	0
JAN 16...	1045	.70	3300	7.8	4.0	.0	11.2	82	K5	52	550	0
MAR 19...	0940	25	--	--	5.0	.0	--	--	--	--	--	--
20...	1015	30	1100	7.8	3.0	.5	12.7	91	75	>2000	170	0
APR 16...	0925	2.5	1250	8.4	16.0	10.0	11.6	110	K2	23	180	0
MAY 08...	1530	.71	1850	8.5	15.0	17.5	10.6	118	250	57	280	0
JUN 18...	1100	1.4	1890	8.0	13.0	18.0	7.8	87	150	1200	230	0
SEP 10...	1130	.03	2360	8.5	24.0	20.0	9.5	109	22	K62	290	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	63	42	320	80	7.7	13	705	0	578	5.7	510	8.7
DEC 12...	63	51	480	86	11	11	892	0	731	7.2	730	9.7
JAN 16...	95	75	650	85	12	14	1050	0	861	27	1000	12
MAR 19...	--	--	--	--	--	--	--	--	--	--	--	--
20...	33	20	160	65	6.1	15	259	0	212	6.6	320	5.8
APR 16...	36	23	210	70	6.7	6.9	344	7	294	2.2	370	5.4
MAY 08...	52	36	340	72	8.9	9.7	532	12	456	2.8	500	6.5
JUN 18...	41	32	340	75	9.7	13	549	0	450	8.8	510	6.9
SEP 10...	45	42	460	77	14	8.0	655	14	561	3.5	710	10

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	.3	7.4	1330	1310	1.81	2.94	.01	.02	.03	.04	.68	.71
DEC 12...	.4	8.3	1750	1790	2.38	2.17	.05	.05	.03	.04	.69	.72
JAN 16...	.5	12	2420	2380	3.29	4.57	.02	.05	.10	.12	1.2	1.3
MAR 19...	--	--	--	--	--	--	--	--	--	--	--	--
20...	.2	8.4	732	694	1.00	--	.59	.66	.43	.52	2.2	2.6
APR 16...	.3	3.4	840	832	1.14	5.76	.03	.03	.02	.02	1.7	1.7
MAY 08...	.3	4.4	1220	1220	1.66	2.34	.01	.01	.03	.04	.93	.96
JUN 18...	.4	6.9	1310	1220	1.78	4.95	.07	.07	.10	.12	1.3	1.4
SEP 10...	.4	8.8	1890	1620	2.57	.15	.00	.00	.27	.33	.83	1.1

K - Results based on colony count outside the acceptable range (non-ideal colony count).

KNIFE RIVER BASIN

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	.72	3.2	.020	.06	.010	--	--	--	--	--	--
DEC 12...	.77	3.4	.020	.06	.010	--	--	--	--	--	--
JAN 16...	1.3	5.8	.030	.09	.010	--	--	--	--	--	--
MAR 19...	--	--	--	--	--	--	--	--	--	--	--
20...	3.2	14	.470	1.4	.340	80	3	0	--	100	60
APR 16...	1.7	7.7	.080	.25	.030	--	--	--	--	--	--
MAY 08...	.97	4.3	.040	.12	.010	--	--	--	--	--	--
JUN 18...	1.5	6.5	.120	.37	.050	--	--	--	--	--	--
SEP 10...	1.1	4.9	.020	.06	.020	0	3	0	89	100	30

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	340	--	--	--	--
DEC 12...	--	--	--	--	--	--	430	--	--	--	--
JAN 16...	--	--	--	--	--	--	530	--	--	--	--
MAR 19...	--	--	--	--	--	--	--	--	--	--	--
20...	40	--	0	0	<1	--	300	0	0	0	--
APR 16...	--	--	--	--	--	--	220	--	--	--	--
MAY 08...	--	--	--	--	--	--	350	--	--	--	--
JUN 18...	--	--	--	--	--	--	390	--	--	--	--
SEP 10...	70	250	0	--	<1	1	560	10	10	0	4

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	20	--	--
DEC 12...	--	--	--	--	--	--	--	--	50	--	--
JAN 16...	--	--	--	--	--	--	--	--	20	--	--
MAR 19...	--	--	--	--	--	--	--	--	--	--	--
20...	3	0	<3	--	28	18	<10	--	290	30	0
APR 16...	--	--	--	--	--	--	--	--	40	--	--
MAY 08...	--	--	--	--	--	--	--	--	10	--	--
JUN 18...	--	--	--	--	--	--	--	--	170	--	--
SEP 10...	0	--	<3	20	6	--	<10	15	14	70	3

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, SUSPENDED RECOV. (UG/L AS MO) (01061)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
JAN											
16...	--	--	--	--	--	--	--	--	--	--	--
MAR											
19...	--	--	--	--	--	--	--	--	--	--	--
20...	33	260	70	190	.3	.6	.0	--	2	0	<10
APR											
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
08...	--	--	--	--	--	--	--	--	--	--	--
JUN											
18...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	67	70	50	18	.0	.0	.0	.04	6	--	<10

DATE	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	--	--	--	--	--	--	--	--	--	--	--
JAN											
16...	--	--	--	--	--	--	--	--	--	--	--
MAR											
19...	--	--	--	--	--	--	--	--	--	--	--
20...	--	11	6	5	--	0	0	0	--	480	<6.0
APR											
16...	--	--	--	--	--	--	--	--	--	--	--
MAY											
08...	--	--	--	--	--	--	--	--	--	--	--
JUN											
18...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	0	11	7	4	40	0	0	0	1	870	<6.0

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)
NOV							
07...	--	--	--	--	--	--	--
DEC							
12...	--	--	--	--	--	--	--
JAN							
16...	--	--	--	--	--	--	--
MAR							
19...	--	--	--	--	--	--	--
20...	30	20	9	--	<8.2	2.2	14
APR							
16...	--	--	--	--	--	--	--
MAY							
08...	--	--	--	--	--	--	--
JUN							
18...	--	--	--	--	--	--	--
SEP							
10...	30	--	<3	23	<26	<.4	19

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP, TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP, TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV							
07...	--	--	--	43	.1	61	.14
DEC							
12...	--	--	--	17	.9	64	.08
JAN							
16...	--	--	--	14	.3	67	.13
MAR							
19...	--	--	--	--	--	60	4.0
20...	1.9	14	1.9	30	2.2	63	5.1
APR							
16...	--	--	--	11	.7	14	.10
MAY							
08...	--	--	--	18	.5	33	.06
JUN							
18...	--	--	--	29	.6	70	.26
SEP							
10...	1.1	18	1.1	27	.5	44	.00

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
OCT					
03...	21	3.91	.490	.870	1.02

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	NOV 7,79 1315	DEC 12,79 1050	JAN 16,80 1045	MAR 20,80 1015
TOTAL CELLS/ML	2600	4400	690	530
DIVERSITY: DIVISION	0.4	0.8	2.0	1.3
.CLASS	0.6	0.8	2.0	1.3
..ORDER	0.6	1.0	2.2	1.9
...FAMILY	0.7	1.1	2.4	3.1
....GENUS	0.7	1.2	2.5	3.1

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	*	--	*	--	*	--	*
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	*	--	*	64	9	--	*
...OOCYSTACEAE								
....ANKISTRODESMUS	130	5	280	6	45	6	130#	25
....CHLORELLA	--	*	39	1	--	*	--	*
....DICTYOSPHAERIUM	--	*	--	*	--	*	--	*
....KIRCHNERIELLA	--	*	--	*	--	*	--	*
....OOCYSTIS	--	*	--	*	--	*	--	*
....SELENASTRUM	--	*	--	*	--	*	--	*
....TETRAEDRON	26	1	--	*	--	*	--	*
...SCENEDESMACEAE								
....CRUCIGENIA	--	*	--	*	--	*	--	*
....SCENEDESMUS	52	2	160	4	--	*	91#	17
....TETRASTRUM	--	*	--	*	--	*	--	*
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	*	--	*	--	*	--	*
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	*	550	13	6	1	45	8
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	26	1	--	*	32	5	30	6
....MELOSIRA	--	*	--	*	--	*	--	*
....STEPHANODISCUS	--	*	--	*	--	*	--	*
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	*	--	*	--	*	--	*
....COCCONEIS	--	*	--	*	--	*	--	*
...CYMBELLACEAE								
....AMPHORA	--	*	--	*	--	*	--	*
....CYMBELLA	--	*	--	*	--	*	--	*
....EPITHEMIA	--	*	--	*	--	*	5	1
...DIATOMACEAE								
....DIATOMA	--	*	--	*	6	1	60	11
...FRAGILARIACEAE								
....FRAGILARIA	26	1	--	*	--	*	--	*
....SYNEDRA	--	*	--	*	6	1	20	4
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	*	--	*	--	*	5	1
...NAVICULACEAE								
....NAVICULA	--	*	--	*	6	1	20	4
...NITZSCHIACEAE								
....NITZSCHIA	26	1	--	*	6	1	86#	16
...SURIRELLACEAE								
....SURIRELLA	--	*	--	*	--	*	5	1
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...CHROMULINACEAE								
....CHRYSOCOCCUS	2400#	89	--	*	--	*	--	*
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	*	--	*	--	*	--	*
....ANACYSTIS	--	*	--	*	--	*	--	*
....COCCOCHLORIS	--	*	--	*	--	*	--	*
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	*	--	*	--	*	--	*
...OSCILLATORIACEAE								
....OSCILLATORIA	--	*	--	*	38	6	--	*
....PHORMIDIUM	--	*	--	*	--	*	--	*

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	NOV 7,79		DEC 12,79		JAN 16,80		MAR 20,80	
TIME	1315		1050		1045		1015	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...ASTASIACEAE								
....RHABDOMONAS	--	-	--	-	--	-	--	-
...EUGLENACEAE								
....EUGLENA	--	-	--	-	13	2	--	-
....TRACHELOMONAS	--	-	3300#	77	240#	35	10	2
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	--	-	220#	32	25	5
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 16,80		MAY 8,80		JUN 18,80		SEP 10,80	
TIME	0925		1530		1100		1130	
TOTAL CELLS/ML	4800		1000		11000		4300	
DIVERSITY: DIVISION	1.3		1.4		1.6		1.3	
.CLASS	1.3		1.5		1.6		1.3	
..ORDER	2.2		1.8		2.3		2.0	
...FAMILY	2.6		2.1		2.7		2.5	
....GENUS	2.8		2.5		3.2		3.1	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	*	0	--	-
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	920#	19	55	5	440	4	86	2
....CHLORELLA	--	-	--	-	570	5	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	58	1
....KIRCHNERIELLA	--	-	41	4	--	-	--	-
....OOCYSTIS	--	-	--	-	260	2	100	2
....SELENASTRUM	--	-	--	-	--	-	43	1
....TETRAEDRON	--	-	--	-	*	0	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	720	7	520	12
....SCENEDESMUS	--	-	55	5	930	9	620	14
....TETRASTRUM	170	3	--	-	--	-	--	-
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	620	6	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	920#	19	55	5	100	1	72	2
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	210	4	41	4	850	8	170	4
....MELOSIRA	--	-	14	1	--	-	--	-
....STEPHANODISCUS	1400#	29	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	*	0	--	-
....COCCONEIS	--	-	--	-	*	0	--	-
...CYMBELLACEAE								
....AMPHORA	--	-	--	-	*	0	--	-
....CYMBELLA	42	1	--	-	--	-	--	-
....EPITHEMIA	--	-	--	-	--	-	--	-
...DIATOMACEAE								
....DIATOMA	130	3	--	-	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	--	-	--	-
....SYNEDRA	42	1	27	3	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	42	1	--	-	*	0	--	-
...NAVICULACEAE								
....NAVICULA	--	-	27	3	130	1	*	0
...NITZSCHIACEAE								
....NITZSCHIA	710	15	82	8	150	1	--	-
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...CHROMULINACEAE								
....CHRYSOCOCCUS	--	-	27	3	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	150	1	--	-
....ANACYSTIS	130	3	580#	55	4400#	41	1100#	24
....COCCOCHLORIS	--	-	41	4	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	500	12
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	540	5	820#	19
....PHORMIDIUM	--	-	--	-	--	-	190	4

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06339550 COYOTE CREEK NEAR ZAP, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

(CONTINUED)

DATE TIME	APR 16,80 0925		MAY 8,80 1530		JUN 18,80 1100		SEP 10,80 1130	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...ASTASIACEAE								
....RHABDOMONAS	--	-	--	-	210	2	--	-
...EUGLENACEAE								
....EUGLENA	--	-	--	-	230	2	29	1
....TRACHELOMONAS	130	3	--	-	77	1	*	0
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	--	-	--	-	--	-
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	29	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339560 BRUSH CREEK NEAR BEULAH, ND

LOCATION.--Lat 47°10'43", long 101°47'05", in NW¼SW¼NW¼ sec.25, T.143 N., R.88 W., Mercer County, Hydrologic Unit 10130201, on right bank 60 ft (18 m) upstream from bridge on State Highway 49, and 6 mi (10 km) south of Beulah.

DRAINAGE AREA.--22 mi² (57 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,948 ft (593.8 m) from State Highway Department levels.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--6 years, 1.32 ft³/s (0.037 m³/s), 952 acre-ft/yr (1.17 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 200 ft³/s (5.7 m³/s) Mar. 21, 1978, gage height 9.26 ft (2.822 m), backwater from ice; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 1.5 ft³/s (0.042 m³/s) Mar. 20, backwater from ice, maximum observed gage height, 8.62 ft (2.627 m) Mar. 12, backwater from ice, no peak above base of 50 ft³/s (1.42 m³/s); minimum daily discharge, 0.04 ft³/s (0.001 m³/s) Jan. 10, 11, 29, Feb. 15, 16, Mar. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.30	.21	.16	.06	.06	.80	.46	.10	.05	.05	.30
2	.11	.28	.23	.14	.06	.06	.80	.43	.10	.05	.06	.24
3	.11	.28	.27	.13	.06	.05	.90	.43	.11	.05	.05	.18
4	.11	.30	.32	.11	.07	.04	1.0	.38	.40	.05	.08	.15
5	.11	.33	.35	.10	.07	.04	1.1	.43	.33	.05	.09	.12
6	.11	.33	.37	.08	.07	.05	1.1	.43	.26	.05	.08	.12
7	.12	.33	.38	.07	.07	.05	.95	.33	.24	.05	.08	.10
8	.15	.30	.39	.06	.07	.06	.90	.28	.22	.07	.08	.09
9	.18	.26	.39	.05	.07	.06	.95	.28	.17	.08	.17	.09
10	.24	.21	.40	.04	.07	.06	1.0	.26	.12	.07	.20	.09
11	.22	.25	.41	.04	.07	.06	1.1	.26	.11	.05	.12	.09
12	.22	.33	.41	.05	.06	.05	1.1	.24	.65	.05	.11	.12
13	.20	.40	.40	.05	.06	.10	1.0	.22	.77	.05	.10	.12
14	.20	.42	.39	.05	.05	.20	.95	.22	.55	.05	.09	.10
15	.18	.43	.37	.05	.04	.30	.90	.22	.35	.06	.11	.10
16	.24	.44	.35	.05	.04	.45	.86	.20	.43	.07	.15	.09
1[illegible]	.26	.45	.38	.05	.06	.60	.77	.18	.38	.05	.17	.09
18	.20	.44	.45	.06	.07	.80	.66	.18	.28	.06	.15	.09
19	.30	.42	.50	.06	.08	1.1	.66	.17	.24	.15	.11	.11
20	.30	.39	.46	.06	.08	1.2	.62	.14	.22	.18	.10	.14
21	.26	.36	.37	.06	.07	1.2	.59	.11	.18	.14	.09	.17
22	.24	.34	.27	.06	.06	1.1	.59	.09	.14	.12	.08	.22
23	.26	.32	.20	.07	.06	1.1	.52	.07	.09	.09	.10	.22
24	.30	.30	.13	.07	.05	1.1	.49	.06	.06	.10	.09	.20
25	.28	.28	.10	.07	.05	1.0	.49	.05	.07	.09	.08	.22
26	.28	.25	.16	.06	.05	1.0	.46	.05	.07	.10	.08	.24
27	.28	.24	.20	.06	.06	.95	.46	.05	.07	.08	.09	.24
28	.26	.22	.16	.05	.06	.90	.49	.08	.07	.08	.09	.22
29	.28	.21	.10	.04	.06	.87	.46	.07	.07	.06	.14	.20
30	.28	.20	.10	.05	---	.84	.43	.08	.05	.06	.12	.17
31	.30	---	.13	.05	---	.82	---	.10	---	.05	.24	---
TOTAL	6.68	9.61	9.35	2.10	1.80	16.27	23.10	6.55	6.90	2.31	3.35	4.63
MEAN	.22	.32	.30	.068	.062	.52	.77	.21	.23	.075	.11	.15
MAX	.30	.45	.50	.16	.08	1.2	1.1	.46	.77	.18	.24	.30
MIN	.10	.20	.10	.04	.04	.04	.43	.05	.05	.05	.05	.09
AC-FT	13	19	19	4.2	3.6	32	46	13	14	4.6	6.6	9.2

CAL YR 1979 TOTAL 406.68 MEAN 1.11 MAX 70 MIN .00 AC-FT 807
WTR YR 1980 TOTAL 92.65 MEAN .25 MAX 1.2 MIN .04 AC-FT 184

06339560 BRUSH CREEK NEAR BEULAH, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT 03...	1245	.11	1800	8.0	12.0	9.0	8.8	83	77	580	420	0
NOV 07...	0915	.31	2000	7.9	-.5	1.5	11.2	88	K12	100	620	0
DEC 12...	1450	.41	2300	7.7	.0	.5	10.8	80	22	290	480	0
MAR 22...	0825	1.1	950	8.0	-2.5	.0	9.8	73	K11	K13000	240	0
APR 17...	1015	.65	1400	8.0	21.0	10.0	8.0	76	K2	K33	380	0
MAY 09...	0815	.28	1980	8.1	7.5	8.0	6.0	54	K160	120	530	0
JUN 18...	0745	.30	1540	7.7	12.0	16.0	4.0	43	230	1900	360	0
JUL 16...	0835	.08	1750	7.9	21.5	16.5	4.6	51	1000	3400	360	0
AUG 21...	1325	.09	1760	8.1	22.5	17.5	6.8	72	250	430	360	0
SEP 10...	1415	.09	1820	7.8	27.5	15.0	6.9	72	190	86	390	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 03...	73	58	290	59	6.2	10	666	0	546	11	480	6.9
NOV 07...	89	97	380	78	6.6	13	698	0	572	14	730	9.5
DEC 12...	82	67	270	73	5.4	12	794	0	651	25	540	7.1
MAR 22...	45	31	110	48	3.5	14	298	0	244	4.8	280	5.1
APR 17...	67	51	200	53	4.5	8.2	478	0	392	7.6	430	5.7
MAY 09...	89	74	280	53	5.3	9.6	681	0	558	8.7	530	6.7
JUN 18...	49	58	300	64	6.9	9.4	608	0	498	19	480	4.1
JUL 16...	57	53	300	64	7.9	8.9	691	0	570	14	450	4.8
AUG 21...	60	50	290	63	6.7	9.5	689	0	565	8.8	430	6.0
SEP 10...	65	55	290	61	6.4	8.0	698	0	572	18	450	6.0

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT 03...	.3	9.3	1260	1260	1.71	.37	.02	--	.03	.04	.44	.47
NOV 07...	.3	9.5	1350	1330	1.84	1.13	.00	.00	.01	.01	.58	.59
DEC 12...	.3	15	1650	1730	2.24	1.83	.07	.07	.06	.07	.85	.91
MAR 22...	.1	10	665	646	.90	1.98	.36	.37	.50	.61	1.2	1.7
APR 17...	.2	9.2	990	1010	1.35	2.27	.03	.03	.00	.00	1.2	1.2
MAY 09...	.2	10	1350	1340	1.84	1.02	.02	.02	.03	.04	.63	.66
JUN 18...	.3	6.0	1230	1210	1.67	1.00	.02	.04	.01	.01	.88	.89
JUL 16...	.8	11	1230	1230	1.67	.27	.28	.12	.04	.04	.80	.83
AUG 21...	.3	11	1200	1200	1.63	.29	.00	.00	.04	.05	.90	.94
SEP 10...	.3	10	1160	1230	1.58	.28	.00	.00	.00	.00	.58	.58

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339560 BRUSH CREEK NEAR BEULAH, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT											
03...	.49	2.2	.020	.06	.000	--	--	--	--	--	--
NOV											
07...	.59	2.6	.020	.02	.010	--	--	--	--	--	--
DEC											
12...	.98	4.3	.040	.12	.020	--	--	--	--	--	--
MAR											
22...	2.1	9.1	.420	1.3	.280	70	2	0	8	200	200
APR											
17...	1.2	5.4	.120	.37	.040	--	--	--	--	--	--
MAY											
09...	.68	3.0	.040	.12	.020	--	--	--	--	--	--
JUN											
18...	.91	4.0	.080	.25	.060	--	--	--	--	--	--
JUL											
16...	1.1	4.9	.100	.31	.060	0	3	1	31	0	0
AUG											
21...	.94	4.2	.080	.25	.060	--	--	--	--	--	--
SEP											
10...	.58	2.6	.050	.15	.030	--	--	--	--	--	--

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT											
03...	--	--	--	--	--	--	360	--	--	--	--
NOV											
07...	--	--	--	--	--	--	360	--	--	--	--
DEC											
12...	--	--	--	--	--	--	420	--	--	--	--
MAR											
22...	50	100	0	0	<1	0	220	0	0	0	5
APR											
17...	--	--	--	--	--	--	270	--	--	--	--
MAY											
09...	--	--	--	--	--	--	340	--	--	--	--
JUN											
18...	--	--	--	--	--	--	370	--	--	--	--
JUL											
16...	60	300	0	--	<1	1	400	10	0	10	8
AUG											
21...	--	--	--	--	--	--	390	--	--	--	--
SEP											
10...	--	--	--	--	--	--	410	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT											
03...	--	--	--	--	--	--	--	--	40	--	--
NOV											
07...	--	--	--	--	--	--	--	--	30	--	--
DEC											
12...	--	--	--	--	--	--	--	--	150	--	--
MAR											
22...	3	0	<3	0	7	0	<10	8	280	30	0
APR											
17...	--	--	--	--	--	--	--	--	90	--	--
MAY											
09...	--	--	--	--	--	--	--	--	30	--	--
JUN											
18...	--	--	--	--	--	--	--	--	180	--	--
JUL											
16...	3	<3	<3	10	6	--	<10	10	93	90	20
AUG											
21...	--	--	--	--	--	--	--	--	60	--	--
SEP											
10...	--	--	--	--	--	--	--	--	60	--	--

06339560 BRUSH CREEK NEAR BEULAH, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
OCT 03...	--	--	--	--	.1	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 12...	--	--	--	--	--	--	--	--	--	--	--
MAR 22...	38	300	20	280	.3	2.8	.0	.02	2	0	<10
APR 17...	--	--	--	--	--	--	--	--	--	--	--
MAY 09...	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--	--	--
JUL 16...	71	100	20	53	.1	.2	.0	.02	1	--	<10
AUG 21...	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 12...	--	--	--	--	--	--	--	--	--	--	--
MAR 22...	1	5	5	0	20	0	0	0	0	890	<6.0
APR 17...	--	--	--	--	--	--	--	--	--	--	--
MAY 09...	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--	--	--	--	--
JUL 16...	2	4	1	3	28	0	0	0	0	1500	<6.0
AUG 21...	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
OCT 03...	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--
DEC 12...	--	--	--	--	--	--	--
MAR 22...	10	4	6	20	13	.8	16
APR 17...	--	--	--	--	--	--	--
MAY 09...	--	--	--	--	--	--	--
JUN 18...	--	--	--	--	--	--	--
JUL 16...	20	10	6	22	<22	<.4	<10
AUG 21...	--	--	--	--	--	--	--
SEP 10...	--	--	--	--	--	--	--

06339560 BRUSH CREEK NEAR BEULAH, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT 03...	--	--	--	11	.5	33	.01
NOV 07...	--	--	--	10	--	39	.03
DEC 12...	--	--	--	22	.2	84	.09
MAR 22...	<.5	16	<.6	22	1.0	14	.04
APR 17...	--	--	--	18	.9	34	.08
MAY 09...	--	--	--	14	.3	18	.01
JUN 18...	--	--	--	40	.2	32	.03
JUL 16...	<.4	<9.9	<.4	11	.2	28	.01
AUG 21...	--	--	--	7.4	.2	25	.01
SEP 10...	--	--	--	13	.4	26	.01

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
MAR 22...	3	5	10	14	17	23	33	49	66	86	100
JUL 16...	3	4	14	21	27	41	64	81	88	100	--

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
AUG 21...	36	1.16	.100	.866	1.18
SEP 10...	20	.090	.000	.551	.709

06339560 BRUSH CREEK NEAR BEULAH, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 3,79	NOV 7,79	DEC 12,79	MAR 22,80	APR 17,80
TIME	1245	0915	1450	0825	1015
TOTAL CELLS/ML	620	6300	7700	4500	20000
DIVERSITY: DIVISION	1.5	0.2	0.8	0.5	0.3
.CLASS	1.5	0.9	1.0	0.5	0.7
..ORDER	2.3	0.9	1.1	0.5	0.8
...FAMILY	2.7	0.9	0.0	0.6	1.5
....GENUS	2.7	0.9	0.0	0.6	1.5

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	89	14	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	5	1	56	1	200	3	67	1	150	1
....CHLORELLA	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	5	1	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....SCENEDESMUS	21	3	--	-	--	-	--	-	300	2
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	58	9	110	2	200	3	110	2	300	2
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	250#	40	4800#	76	200	3	--	-	600	3
....STEPHANODISCUS	--	-	--	-	--	-	45	1	--	-
..PENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	--	-	--	-	*	0	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	--	-	150	1
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	67	1	--	-	--	-
....SYNEDRA	11	2	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	26	4	--	-	--	-	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	74	12	--	-	67	1	--	-	750	4
...TABELLARIACEAE										
....TABELLARIA	--	-	--	-	--	-	45	1	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES	--	-	--	-	6300#	82	--	-	--	-
...CHROMULINACEAE										
....CHRYSOCOCCUS	--	-	1300#	21	--	-	--	-	--	-
...OCHROMONADACEAE										
....OCHROMONAS	--	-	--	-	--	-	--	-	14000#	72
...SYNURACEAE										
....SYNURA	--	-	--	-	--	-	--	-	3000#	15
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	--	-	4200#	93	--	-
....SCHIZOTHRIX	58	9	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06339560 BRUSH CREEK NEAR BEULAH, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	OCT 3,79 1245		NOV 7,79 0915		DEC 12,79 1450		MAR 22,80 0825		APR 17,80 1015	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	5	1	--	-	67	1	--	-	150	1
....TRACHELOMONAS	21	3	--	-	400	5	--	-	150	1
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	--	-	200	3	45	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339560 BRUSH CREEK NEAR BEULAH, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAY 9,80		JUN 18,80		JUL 16,80		AUG 21,80		SEP 10,80	
TIME	0815		0745		0635		1325		1415	
TOTAL CELLS/ML	930		500		140		26		120	
DIVERSITY: DIVISION	1.3		1.6		0.7		1.0		0.5	
.CLASS	1.9		1.6		0.7		1.0		0.5	
..ORDER	2.5		2.1		1.4		1.0		0.5	
...FAMILY	3.2		2.5		1.7		1.0		1.4	
....GENUS	3.3		2.6		1.7		1.0		1.8	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	41	4	13	3	--	-	--	-	--	-
....CHLORELLA	--	-	13	3	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	13#	50	--	-
...SCENEDESMACEAE										
....SCENEDESMUS	--	-	26	5	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	41	4	26	5	--	-	--	-	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	13	3	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	180#	19	52	10	77#	55	--	-	51#	44
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	14	1	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	13	9	--	-	13	11
...CYMBELLACEAE										
....CYMBELLA	14	1	--	-	--	-	--	-	--	-
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	55	6	13	3	--	-	13#	50	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	13	3	--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	55	6	13	3	26#	18	--	-	39#	33
...NITZSCHIACEAE										
....NITZSCHIA	140	15	52	10	--	-	--	-	--	-
...TABELLARIACEAE										
....TABELLARIA	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES	--	-	--	-	--	-	--	-	--	-
...CHROMULINACEAE										
....CHRYSOCOCCUS	41	4	--	-	--	-	--	-	--	-
...OCHROMONADACEAE										
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-
...SYNURACEAE										
....SYNURA	140	15	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	14	1	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	13	11
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	180#	19	--	-	26#	18	--	-	--	-
....COCCOCHLORIS	14	1	--	-	--	-	--	-	--	-
..HORMOGONALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	260#	51	--	-	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06339560 BRUSH CREEK NEAR BEULAH, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED).

DATE	MAY 9,80		JUN 18,80		JUL 16,80		AUG 21,80		SEP 10,80	
TIME	0815		0745		0835		1325		1415	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	13	3	--	-	--	-	--	-
....TRACHELOMONAS	14	1	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND

LOCATION.--Lat 47°20'34", long 102°37'03", in NW¼NW¼NE¼ sec.35, T.145 N., R.94 W., Dunn County, Hydrologic Unit 10130201, on right bank 100 ft (30 m) upstream from bridge on township road, 0.5 mi (0.8 km) south of Dunn Center, and 3.8 mi (6.1 km) downstream from Lake Ilo.

DRAINAGE AREA.--116 mi² (300 km²), of which about 12 mi² (31 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,150 ft (655 m), from topographic map.

REMARKS.--Records good. Some regulation by Lake Ilo.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,150 ft³/s (32.6 m³/s) Mar. 27, 1978, gage height, 7.88 ft (2.402 m); minimum daily, 0.28 ft³/s (0.008 m³/s) Sept. 11, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 255 ft³/s (7.22 m³/s) June 11, gage height, 3.91 ft (1.192 m); minimum daily, 0.28 ft³/s (0.008 m³/s) Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	.53	.85	.89	.80	.92	1.2	.54	.42	.52	.39	.54
2	.49	.51	.88	.92	.80	.96	1.1	.71	.40	.52	.41	.44
3	.47	.50	.92	.85	.90	.96	1.5	.80	.41	.53	.41	.42
4	.45	.50	.95	.90	.95	.92	2.1	.77	.56	.52	.41	.42
5	.43	.51	.95	.88	1.0	.96	1.7	.68	.51	.49	.43	.39
6	.42	.51	.95	.95	1.0	.96	1.0	.62	.59	.47	.40	.38
7	.48	.51	.85	.94	1.0	.96	1.4	.59	1.0	.47	.42	.38
8	.60	.52	.72	.91	1.0	.96	1.1	.60	.76	.56	.42	.36
9	.79	.52	.76	.89	1.0	1.0	1.1	.61	.43	.96	.48	.35
10	.67	.53	.84	.92	.90	.96	1.0	.62	.39	.57	.49	.29
11	.48	.50	.90	.92	.90	1.0	.96	.61	20	.56	.48	.28
12	.48	.50	.85	.89	.90	1.0	.96	.44	15	.56	.48	.49
13	.48	.50	.86	.96	1.0	1.0	.92	.39	1.9	.52	.45	.36
14	.47	.55	.83	1.0	1.0	1.1	.85	.38	1.1	.52	.43	.32
15	.48	.56	.85	1.0	.90	1.5	.78	.38	.78	.49	.45	.32
16	.54	.56	.71	.96	.90	1.2	.92	.37	.68	.49	.54	.30
17	.56	.61	.72	.92	.95	1.1	.78	.38	.64	.45	.50	.32
18	.53	.76	.80	1.0	1.0	1.3	.71	.38	.60	.45	.42	.30
19	.52	.77	.79	.91	1.0	1.3	.64	.37	.60	.50	.40	.34
20	.54	.75	.78	.97	.90	1.2	.60	.40	.60	.52	.43	.32
21	.50	.78	.81	.89	.90	1.2	.59	.43	.57	.45	.38	.36
22	.49	.79	.80	.89	.90	1.2	.57	.42	.62	.42	.30	.42
23	.50	.79	.78	.92	.90	1.2	.72	.40	.68	.39	.29	.38
24	.50	.81	.82	.88	.90	1.3	1.2	.37	.60	.39	.32	.36
25	.50	.79	.81	.93	.89	1.5	1.2	.37	.56	.38	.32	.38
26	.51	.85	.93	.96	.89	1.5	.85	.40	.53	.36	.29	.34
27	.53	.85	.91	.94	.92	1.6	.55	.40	.56	.36	.32	.34
28	.52	.86	.86	.93	.89	1.4	.53	.40	.57	.33	.82	.34
29	.54	.86	.88	.85	.89	1.4	.52	.41	.54	.31	.81	.45
30	.54	.87	.87	.80	---	1.4	.52	.42	.53	.34	.44	.76
31	.53	---	.86	.80	---	1.3	---	.42	---	.38	.52	---
TOTAL	16.04	19.45	26.09	28.37	26.88	36.26	28.57	15.08	53.13	14.78	13.65	11.45
MEAN	.52	.65	.84	.92	.93	1.17	.95	.49	1.77	.48	.44	.38
MAX	.79	.87	.95	1.0	1.0	1.6	2.1	.80	20	.96	.82	.76
MIN	.42	.50	.71	.80	.80	.92	.52	.37	.39	.31	.29	.28
AC-FT	32	39	52	56	53	72	57	30	105	29	27	23

CAL YR 1979 TOTAL 4395.14 MEAN 12.0 MAX 530 MIN .41 AC-FT 8720
WTR YR 1980 TOTAL 289.75 MEAN .79 MAX 20 MIN .28 AC-FT 575

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
OCT 05...	0845	.44	2410	8.4	12.0	10.0	8.3	81	K7	150	440
NOV 08...	1450	.52	2530	8.2	3.0	2.0	15.4	119	--	--	520
DEC 11...	0920	.92	1770	7.7	-18.0	1.0	--	--	K1	K9	330
JAN 18...	1100	1.1	1800	7.4	-2.0	.5	8.5	64	K1	20	280
FEB 13...	1030	1.0	1940	7.5	-5.0	.0	8.8	65	350	130	340
MAR 27...	0845	1.4	1700	7.6	10.5	1.0	13.1	97	K7	980	310
APR 21...	1700	.60	1660	8.3	29.5	19.5	8.9	103	K11	21	300
MAY 13...	0915	.39	2005	8.6	8.0	12.0	9.9	99	K16	K12	390
JUN 16...	1630	.68	2400	7.9	23.5	25.0	10.9	122	97	430	510
JUL 15...	0910	.48	2620	8.2	18.0	19.0	3.9	46	K17	140	610
AUG 20...	1315	.42	2250	8.7	19.0	19.5	7.4	87	18	230	390
SEP 09...	0930	.37	2490	8.5	15.0	14.0	6.9	70	22	240	520

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)
OCT 05...	0	91	51	440	68	9.2	10	612	10	518	4.0
NOV 08...	0	97	67	430	64	8.2	11	688	0	564	6.9
DEC 11...	0	64	41	320	80	7.7	9.1	558	0	457	18
JAN 18...	0	55	35	290	68	7.5	11	600	0	492	38
FEB 13...	0	65	43	350	68	8.3	10	620	0	508	31
MAR 27...	0	58	40	320	68	7.9	10	527	0	432	21
APR 21...	0	58	38	280	66	7.9	7.5	420	0	344	3.4
MAY 13...	0	77	48	340	65	7.5	8.2	504	13	435	2.1
JUN 16...	200	92	67	360	61	7.0	1.2	378	0	310	7.6
JUL 15...	160	110	81	420	60	8.4	10	544	0	446	5.5
AUG 20...	0	73	51	400	68	8.8	11	575	23	509	2.0
SEP 09...	46	97	67	400	62	7.6	7.4	549	14	474	2.9

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT 05...	780	10	.8	12	1770	1710	2.41	2.10	.03	--	.06
NOV 08...	850	7.3	.6	16	1830	1820	2.49	2.57	.01	.01	.16
DEC 11...	580	6.2	.5	10	1270	1310	1.73	3.15	.29	.26	.26
JAN 18...	480	6.2	.6	9.4	1260	1190	1.71	3.74	.25	.26	.24
FEB 13...	560	12	.7	10	1360	1360	1.85	3.67	.32	.31	.45
MAR 27...	510	7.0	.6	6.9	1170	1210	1.59	4.42	.17	.19	.15
APR 21...	510	5.1	.6	6.3	1180	1120	1.60	1.91	.00	.03	.00
MAY 13...	690	5.8	.6	5.5	1430	1440	1.94	1.51	.02	.04	.00
JUN 16...	910	5.9	.4	13	1870	1640	2.54	3.43	.00	.04	.05
JUL 15...	1000	29	.8	2.9	2040	1920	2.77	2.64	.04	.03	.13
AUG 20...	760	6.3	.7	7.2	1600	1620	2.18	1.81	.00	.00	.09
SEP 09...	890	17	.8	6.3	2220	1770	3.02	2.22	.00	.00	.01

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)
OCT 05...	.07	.78	.84	.87	3.9	.060	.25	.010	--	--	--
NOV 08...	.19	.94	1.1	1.1	4.9	.070	.21	.010	--	--	--
DEC 11...	.31	1.2	1.5	1.8	7.9	.080	.25	.030	--	--	--
JAN 18...	.29	2.0	2.2	2.5	11	.090	.28	.050	--	--	--
FEB 13...	.54	1.3	1.7	2.0	8.9	.090	.28	.040	--	--	--
MAR 27...	.18	1.4	1.5	1.7	7.4	.100	.31	.050	--	--	--
APR 21...	.00	1.1	1.1	1.1	4.9	.110	.34	.020	40	2	1
MAY 13...	.00	.94	.94	.96	4.3	.110	.34	.040	--	--	--
JUN 16...	.06	1.5	1.5	1.5	6.6	.130	.40	.080	--	--	--
JUL 15...	.16	2.0	2.1	2.1	9.5	.180	.55	.080	10	5	1
AUG 20...	.11	1.1	1.2	1.2	5.3	.170	.52	.100	--	--	--
SEP 09...	.01	1.4	1.4	1.4	6.2	.120	.37	.060	--	--	--

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)
OCT 05...	--	--	--	--	--	--	--	--	770	--	--
NOV 08...	--	--	--	--	--	--	--	--	760	--	--
DEC 11...	--	--	--	--	--	--	--	--	490	--	--
JAN 18...	--	--	--	--	--	--	--	--	470	--	--
FEB 13...	--	--	--	--	--	--	--	--	510	--	--
MAR 27...	--	--	--	--	--	--	--	--	460	--	--
APR 21...	63	400	400	50	50	0	<3	1	450	0	0
MAY 13...	--	--	--	--	--	--	--	--	580	--	--
JUN 16...	--	--	--	--	--	--	--	--	760	--	--
JUL 15...	9	100	40	60	150	0	<1	1	1000	20	10
AUG 20...	--	--	--	--	--	--	--	--	670	--	--
SEP 09...	--	--	--	--	--	--	--	--	980	--	--

DATE	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT 05...	--	--	--	--	--	--	--	--	10	--	--
NOV 08...	--	--	--	--	--	--	--	--	30	--	--
DEC 11...	--	--	--	--	--	--	--	--	140	--	--
JAN 18...	--	--	--	--	--	--	--	--	260	--	--
FEB 13...	--	--	--	--	--	--	--	--	230	--	--
MAR 27...	--	--	--	--	--	--	--	--	200	--	--
APR 21...	0	9	0	<8	20	4	<25	23	35	50	2
MAY 13...	--	--	--	--	--	--	--	--	30	--	--
JUN 16...	--	--	--	--	--	--	--	--	90	--	--
JUL 15...	10	9	3	<3	20	15	29	33	<10	70	40
AUG 20...	--	--	--	--	--	--	--	--	30	--	--
SEP 09...	--	--	--	--	--	--	--	--	40	--	--

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)
APR											
21...	48	370	90	280	.5	.3	.2	.04	3	<25	2
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
JUN											
16...	--	--	--	--	--	--	--	--	--	--	--
JUL											
15...	26	600	500	98	.1	.0	.1	.07	2	<10	4
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

DATE	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
APR										
21...	4	1	3	30	0	0	0	2	1100	<6.0
MAY										
13...	--	--	--	--	--	--	--	--	--	--
JUN										
16...	--	--	--	--	--	--	--	--	--	--
JUL										
15...	6	1	5	31	0	0	0	0	820	<3.0
AUG										
20...	--	--	--	--	--	--	--	--	--	--
SEP										
09...	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)
APR							
21...	30	20	<8	60	6.3	1.3	6.6
MAY							
13...	--	--	--	--	--	--	--
JUN							
16...	--	--	--	--	--	--	--
JUL							
15...	40	--	<3	55	<39	.9	<16
AUG							
20...	--	--	--	--	--	--	--
SEP							
09...	--	--	--	--	--	--	--

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT							
05...	--	--	--	18	2.1	102	.12
NOV							
08...	--	--	--	31	.6	69	.10
DEC							
11...	--	--	--	25	.8	45	.11
JAN							
18...	--	--	--	31	.1	20	.06
FEB							
13...	--	--	--	31	.6	16	.04
MAR							
27...	--	--	--	25	--	8	.03
APR							
21...	1.3	6.2	1.2	19	.8	35	.06
MAY							
13...	--	--	--	3.8	.9	63	.07
JUN							
16...	--	--	--	39	.7	33	.06
JUL							
15...	1.1	<16	1.1	27	--	57	.07
AUG							
20...	--	--	--	5.8	.9	45	.05
SEP							
09...	--	--	--	17	1.1	53	.05

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
APR											
21...	32	35	39	43	44	52	64	75	80	100	--
JUL											
15...	11	13	26	37	40	49	64	78	85	94	100

DATE	LENGTH OF EXPOSURE (DAYS) (00022)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
JUL					
15...	29	21.7	8.25	18.0	23.0
AUG					
20...	36	6.71	1.03	19.1	22.3
SEP					
09...	20	8.03	1.29	8.43	11.5

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 5,79	NOV 8,79	DEC 11,79	JAN 18,80	FEB 13,80	MAR 27,80
TIME	0845	1450	0920	1100	1030	0845
TOTAL CELLS/ML	26000	10000	1700	5100	820	8800
DIVERSITY: DIVISION	1.3	0.9	1.9	1.6	0.9	0.4
.CLASS	1.3	1.1	1.9	1.6	0.9	0.4
..ORDER	1.4	1.3	2.5	1.8	1.7	0.5
...FAMILY	2.3	1.5	3.0	1.8	2.1	0.5
....GENUS	3.2	1.7	3.2	2.0	2.1	0.5

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	52	1
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	650	3	--	-	--	-	--	-	--	-	--	-
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	110	14	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-	--	-
....MICRACTINIUM	1400	5	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	5200#	20	940	9	96	6	69	1	--	-	*	0
....CHLORELLA	3900	15	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....GLOEOACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	1400	5	190	2	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	14	1	--	-	110	14	--	-
....SELENASTRUM	--	-	--	-	14	1	--	-	--	-	*	0
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	340	1	380	4	--	-	--	-	--	-	--	-
....SCENEDESMUS	3700	14	750	7	320#	19	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	170	1	660	6	220	13	800#	16	310#	39	170	2
..ZYGNEMATALES												
...ZYGNEMATACEAE												
....SPIROGYRA	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	1400	5	470	5	120	7	--	-	230#	28	100	1
....MELOSIRA	--	-	--	-	--	-	--	-	14	2	52	1
....SKELETONEMA	4400#	17	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	2500#	49	--	-	--	-
..PENNALES												
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	--	-	52	1
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	330#	20	--	-	--	-	--	-
....SYNEDRA	170	1	--	-	27	2	--	-	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	340	1	--	-	14	1	35	1	14	2	*	0
...NITZSCHIACEAE												
....NITZSCHIA	--	-	--	-	96	6	--	-	16	2	52	1
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	7000#	67	--	-	--	-	--	-	--	-
...OCHROMONADACEAE												
....DINOBRYON	--	-	--	-	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	82	5	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	OCT 5,79		NOV 8,79		DEC 11,79		JAN 18,80		FEB 13,80		MAR 27,80	
TIME	0845		1450		0920		1100		1030		0845	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	260#	16	350	7	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	1200#	23	--	-	8200#	94
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	510	2	--	-	27	2	69	1	--	-	*	0
....LEPOCINCLIS	--	-	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	2700	10	--	-	41	2	140	3	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 21,80		MAY 13,80		JUN 16,80		JUL 15,80		AUG 20,80		SEP 9,80	
TIME	1700		0915		1630		0910		1315		0930	
TOTAL CELLS/ML	6500		14000		10000		6100		14000		12000	
DIVERSITY: DIVISION	1.5		1.5		1.4		1.8		1.7		1.7	
.CLASS	1.5		1.6		1.4		1.8		2.0		1.7	
..ORDER	1.9		1.9		1.7		2.3		2.3		2.2	
...FAMILY	2.7		2.5		1.9		2.6		3.0		2.4	
....GENUS	3.8		3.0		2.1		3.1		3.7		2.7	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	34	1	*	0	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	1100	8	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	86	1	--	-	--	-	--	-
....MICRACTINIUM	--	-	580	4	--	-	--	-	--	-	550	5
...OOCYSTACEAE												
....ANKISTRODESMUS	800	12	550	4	86	1	150	2	*	0	--	-
....CHLORELLA	170	3	290	2	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	73	1	--	-	100	2	--	-	--	-
....DICTYOSPHAERIUM	130	2	400	3	--	-	--	-	--	-	92	1
....GLOEOACTINIUM	270	4	290	2	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	67	1	--	-	--	-	--	-	380	3	--	-
....OOCYSTIS	--	-	--	-	86	1	--	-	130	1	--	-
....SELENASTRUM	230	4	260	2	340	3	50	1	--	-	92	1
....TETRAEDRON	--	-	*	0	--	-	--	-	*	0	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	270	4	440	3	--	-	--	-	960	7	730	6
....SCENEDESMUS	1100#	18	2600#	19	860	8	1300#	21	2500#	18	2200#	18
....TETRASTRUM	400	6	150	1	340	3	--	-	1000	7	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	*	0	1000	10	450	7	700	5	1600	14
..ZYGNEMATALES												
...ZYGNEMATACEAE												
....SPIROGYRA	440	7	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	170	3	990	7	6400#	63	700	11	1500	10	1500	12
....MELOSIRA	--	-	--	-	--	-	200	3	250	2	--	-
....SKELETONEMA	--	-	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	100	2	--	-	--	-	--	-	*	0	--	-
..PENNALES												
...DIATOMACEAE												
....DIATOMA	130	2	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	600	9	440	3	--	-	--	-	--	-	--	-
....SYNEDRA	100	2	--	-	--	-	--	-	*	0	--	-
...NAVICULACEAE												
....GYROSIGMA	34	1	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	--	-	--	-	100	2	190	1	--	-
...NITZSCHIACEAE												
....NITZSCHIA	100	2	--	-	86	1	800	13	130	1	180	2
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	*	0	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	700	5	--	-
...OCHROMONADACEAE												
....DINOBRYON	--	-	--	-	--	-	--	-	1100	8	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	*	0	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	170	2	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06339800 SPRING CREEK BELOW LAKE ILO AT DUNN CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	APR 21,80		MAY 13,80		JUN 16,80		JUL 15,80		AUG 20,80		SEP 9,80	
TIME	1700		0915		1630		0910		1315		0930	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	370	3
....ANACYSTIS	910	14	5500#	40	430	8	--	-	2300#	16	180	2
....COCCOCHLORIS	270	4	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	730	5	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	67	1	73	1	86	1	600	10	700	5	92	1
....LEPOCINCLIS	--	-	--	-	--	-	--	-	*	0	--	-
....PHACUS	--	-	*	0	--	-	50	1	--	-	--	-
....TRACHELOMONAS	67	1	290	2	170	2	1400#	22	*	0	4300#	36
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	*	0	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	250	4	--	-	92	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339900 SPRING CREEK NEAR HALLIDAY, ND

LOCATION.--Lat 47°21'56", long 102°22'35", in NE¼SE¼NE¼ sec.22, T.145 N., R.92 W., Dunn County, Hydrologic Unit 10130201, on left bank 600 ft (183 m) upstream from bridge on township road, 1.7 mi (2.7 km) northwest of Halliday, and 3.6 mi (5.8 km) upstream from Alkali Creek.

DRAINAGE AREA.--260 mi² (673 km²) approximately, of which about 25 mi² (65 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,050 ft (625 m), from topographic map.

REMARKS.--Records good except those for November to April, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft³/s (59.5 m³/s) Mar. 27, 1978, gage height, 14.3 ft (4.36 m), from floodmark, backwater from ice; no flow Mar. 14-17, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 388 ft³/s (11.0 m³/s) June 12, gage height, 5.98 ft (1.823 m), only peak above base of 130 ft³/s (3.68 m³/s); minimum, 1.8 ft³/s (0.51 m³/s) Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	4.9	3.2	3.0	3.8	3.7	8.8	4.6	2.4	2.4	2.0	8.8
2	3.0	4.5	3.6	3.3	4.0	3.5	8.4	4.6	2.6	2.4	2.0	6.4
3	3.2	4.3	4.0	3.6	4.3	3.4	8.0	4.6	2.4	2.4	2.0	4.4
4	2.8	4.3	4.4	4.0	4.6	3.3	8.0	4.6	4.4	2.6	2.0	4.1
5	2.2	4.3	4.9	3.4	4.8	3.2	9.0	4.6	10	2.4	2.1	3.6
6	2.1	4.5	4.6	3.0	4.7	3.0	10	4.6	6.4	2.3	2.2	3.4
7	2.6	4.6	4.0	2.6	4.5	3.1	15	4.2	5.1	2.3	2.1	2.7
8	3.6	4.1	4.5	2.5	4.3	3.3	20	4.2	5.5	2.2	2.2	2.6
9	3.8	3.9	5.4	2.4	4.0	3.8	13	4.1	4.4	2.4	2.7	2.3
10	3.9	3.9	4.8	2.4	3.8	4.5	9.9	3.9	4.2	2.8	3.3	2.3
11	4.3	3.9	4.4	3.0	3.6	5.8	8.6	3.9	4.9	2.6	3.0	2.3
12	5.9	4.6	3.6	4.0	3.5	7.0	7.7	3.8	244	2.2	3.0	4.4
13	5.8	4.6	3.3	3.9	3.3	9.0	7.1	3.8	161	2.3	3.0	4.6
14	4.9	6.4	3.1	3.7	3.1	11	6.1	3.8	51	2.6	2.8	3.8
15	4.6	6.1	3.0	3.5	3.0	13	5.7	3.8	25	2.3	3.1	3.3
16	4.6	6.5	3.3	3.3	3.2	15	5.9	3.9	14	2.2	4.4	3.1
17	4.7	5.9	3.6	3.1	3.7	17	5.7	3.8	9.0	2.0	4.9	2.9
18	4.3	5.2	4.1	3.0	4.2	19	5.3	3.8	6.2	2.0	4.9	2.8
19	4.4	4.9	4.5	3.4	4.7	22	5.5	3.4	5.3	2.3	4.4	2.8
20	5.5	4.5	4.4	3.3	4.9	26	5.5	3.3	4.9	2.8	3.7	2.8
21	5.8	4.3	4.0	3.1	5.0	23	5.5	3.4	4.4	2.8	3.9	3.2
22	5.0	4.1	3.6	2.9	4.8	20	5.3	3.4	3.9	2.8	3.6	5.4
23	4.9	4.0	3.3	2.8	4.6	18	4.9	2.6	4.1	2.6	3.3	4.1
24	4.7	3.7	3.3	2.6	4.5	16	4.7	2.1	3.8	2.4	3.6	3.7
25	4.6	3.5	3.5	2.5	4.3	14	4.7	2.0	3.1	2.4	3.3	4.0
26	4.6	3.3	3.2	2.4	4.1	13	4.9	2.0	2.8	2.4	3.3	3.6
27	4.6	3.1	3.0	2.3	4.0	12	5.9	2.0	2.7	2.2	3.4	3.3
28	4.6	3.0	2.8	2.2	3.9	11	6.1	2.0	2.8	2.1	3.6	3.1
29	4.3	3.0	2.6	2.3	3.8	10	5.5	2.0	2.7	2.0	4.1	3.1
30	4.3	3.0	2.8	2.8	---	9.8	4.9	2.0	2.7	2.1	4.2	3.1
31	4.5	---	2.9	3.2	---	9.3	---	2.1	---	2.1	5.1	---
TOTAL	130.9	130.9	115.7	93.5	119.0	335.7	225.6	106.9	605.7	73.4	101.2	110.0
MEAN	4.22	4.36	3.73	3.02	4.10	10.8	7.52	3.45	20.2	2.37	3.26	3.67
MAX	5.9	6.5	5.4	4.0	5.0	26	20	4.6	244	2.8	5.1	8.8
MIN	2.1	3.0	2.6	2.2	3.0	3.0	4.7	2.0	2.4	2.0	2.0	2.3
AC-FT	260	260	229	185	236	666	447	212	1200	146	201	218

CAL YR 1979 TOTAL 8907.7 MEAN 24.4 MAX 1340 MIN 1.0 AC-FT 17670
WTR YR 1980 TOTAL 2148.5 MEAN 5.87 MAX 244 MIN 2.0 AC-FT 4260

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
04...	1130	2.0	2080	8.4	17.5	8.5	10.2	95	180	150	460	31
NOV												
08...	1200	4.0	2140	8.3	2.0	.0	13.5	101	--	--	580	110
DEC												
11...	1430	4.4	2190	8.1	-11.0	.0	--	--	K11	160	600	97
JAN												
23...	1040	2.8	2150	7.3	4.0	.5	9.9	75	K8	25	550	41
FEB												
13...	1500	3.3	2010	7.7	-7.0	.0	9.8	72	K5	K3	510	21
MAR												
19...	1630	22	1060	7.4	6.0	.5	10.6	79	42	>2000	240	12
APR												
14...	1645	6.1	1580	8.5	17.0	12.0	13.2	132	48	K8	360	40
MAY												
13...	1530	3.8	1940	8.6	13.5	16.5	10.9	118	73	110	500	31
30...	1015	2.2	--	--	16.5	18.0	--	--	--	--	--	--
JUN												
17...	1445	8.8	1170	7.8	27.0	23.5	6.2	75	580	1800	260	32
JUL												
15...	1300	2.4	1790	8.5	22.0	21.0	7.5	90	125	100	410	28
AUG												
20...	1635	3.6	1920	8.7	17.0	20.5	9.3	111	330	180	410	27
SEP												
09...	1300	2.3	1950	8.4	20.0	17.5	10.8	119	28	K23	420	8

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
04...	65	72	310	59	6.3	9.6	493	14	428	3.3	690	8.3
NOV												
08...	100	81	290	51	5.2	9.9	578	0	474	4.6	690	7.0
DEC												
11...	100	86	340	70	6.0	9.0	618	0	507	7.9	770	7.7
JAN												
23...	100	74	300	58	5.5	8.6	620	0	508	50	680	6.7
FEB												
13...	96	65	310	57	6.0	8.9	593	0	486	19	670	7.3
MAR												
19...	45	31	160	54	4.4	17	278	0	228	10	330	6.1
APR												
14...	63	49	210	55	5.5	8.6	368	11	338	2.0	490	6.4
MAY												
13...	90	67	290	55	5.6	9.3	537	17	468	2.3	620	5.8
30...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
17...	48	35	160	56	4.3	10	278	0	228	7.1	360	3.4
JUL												
15...	66	60	290	60	7.1	8.5	437	14	382	2.4	630	4.7
AUG												
20...	60	64	280	59	6.0	9.9	426	22	385	1.5	670	11
SEP												
09...	63	63	300	61	6.4	7.1	494	4	411	3.2	670	7.5

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
04...	.6	9.7	1470	1420	2.00	11.1	.05	--	.03	.04	.49	.52
NOV												
08...	.6	8.9	1490	1470	2.03	16.1	.03	.02	.07	.09	.50	.57
DEC												
11...	.6	14	1620	1630	2.20	19.2	.08	.05	.05	.05	.66	.71
JAN												
23...	.5	16	1480	1500	2.01	11.2	.18	.57	.18	.22	.55	.73
FEB												
13...	.6	16	1460	1470	1.99	13.0	.18	.17	.17	.21	.57	.74
MAR												
19...	.3	9.2	739	720	1.01	43.9	.49	.50	.69	.89	2.0	2.7
APR												
14...	.5	5.2	1030	1030	1.40	17.0	.04	.03	.17	.21	1.0	1.2
MAY												
13...	.6	10	1380	1380	1.88	14.2	.02	.05	.04	.05	.96	1.0
30...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
17...	.4	12	716	767	.97	17.0	.17	.21	.36	.46	1.4	1.8
JUL												
15...	.6	2.1	1320	1290	1.80	8.55	.08	.02	.04	.05	1.2	1.2
AUG												
20...	.6	2.9	1370	1330	1.86	13.3	.00	.00	.06	.07	.80	.86
SEP												
09...	.6	1.9	1420	1360	1.93	8.82	.00	.00	.00	.00	.94	.94

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT											
04...	.57	2.5	.010	.03	.000	--	--	--	--	--	--
NOV											
08...	.60	2.7	.010	.03	.000	--	--	--	--	--	--
DEC											
11...	.79	3.5	.020	.06	.000	--	--	--	--	--	--
JAN											
23...	.91	4.0	.040	.12	.020	--	--	--	--	--	--
FEB											
13...	.92	4.1	.030	.09	.010	--	--	--	--	--	--
MAR											
19...	3.2	14	.380	1.2	.330	30	1	0	--	200	200
APR											
14...	1.2	5.3	.090	.28	.050	0	--	--	--	--	--
MAY											
13...	1.0	4.5	.080	.25	.030	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
17...	2.0	8.7	.230	.71	.100	--	--	--	--	--	--
JUL											
15...	1.2	5.3	.090	.28	.030	0	3	1	23	100	10
AUG											
20...	.86	3.8	.060	.18	.040	--	--	--	--	--	--
SEP											
09...	.94	4.2	.040	.12	.020	--	--	--	--	--	--

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, SUS- PENDED RECOV. (UG/L AS BE) (01011)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BERYL- LIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01013)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, SUS- PENDED RECOV. (UG/L AS CR) (01031)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)
OCT											
04...	--	--	--	--	--	--	800	--	--	--	--
NOV											
08...	--	--	--	--	--	--	760	--	--	--	--
DEC											
11...	--	--	--	--	--	--	740	--	--	--	--
JAN											
23...	--	--	--	--	--	--	730	--	--	--	--
FEB											
13...	--	--	--	--	--	--	690	--	--	--	--
MAR											
19...	40	--	0	0	<1	--	430	0	0	10	--
APR											
14...	40	--	--	--	<1	--	480	--	--	0	--
MAY											
13...	--	--	--	--	--	--	730	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
17...	--	--	--	--	--	--	420	--	--	--	--
JUL											
15...	90	12	0	--	<1	1	740	10	10	0	5
AUG											
20...	--	--	--	--	--	--	920	--	--	--	--
SEP											
09...	--	--	--	--	--	--	850	--	--	--	--

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, SUS- PENDED RECOV- ERABLE (UG/L AS CO) (01036)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU) (01041)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM SUS- PENDED RECOV- ERABLE (UG/L AS LI) (01131)
OCT											
04...	--	--	--	--	--	--	--	--	10	--	--
NOV											
08...	--	--	--	--	--	--	--	--	10	--	--
DEC											
11...	--	--	--	--	--	--	--	--	50	--	--
JAN											
23...	--	--	--	--	--	--	--	--	50	--	--
FEB											
13...	--	--	--	--	--	--	--	--	30	--	--
MAR											
19...	2	0	<3	--	13	3	<10	--	200	30	0
APR											
14...	--	--	<3	--	--	--	<10	--	66	--	--
MAY											
13...	--	--	--	--	--	--	--	--	10	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
17...	--	--	--	--	--	--	--	--	170	--	--
JUL											
15...	3	--	<3	10	14	--	20	10	<10	70	7
AUG											
20...	--	--	--	--	--	--	--	--	20	--	--
SEP											
09...	--	--	--	--	--	--	--	--	20	--	--

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, SUS- PENDED RECOV. (UG/L AS MN) (01054)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY SUS- PENDED RECOV- ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG) (71921)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, SUS- PENDED RECOV. (UG/L AS MO) (01061)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)
MAR											
19...	44	200	20	180	.4	.2	.2	--	2	0	<10
APR											
14...	61	--	--	80	--	.1	--	--	--	--	10
JUL											
15...	63	120	90	33	.2	.0	.2	.02	2	--	<10
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
OCT											
04...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
11...	--	--	--	--	--	--	--	--	--	--	--
JAN											
23...	--	--	--	--	--	--	--	--	--	--	--
FEB											
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
19...	--	10	10	[illegible]	--	0	0	0	--	970	<6.0
APR											
14...	--	--	--	3	--	--	--	0	--	1400	<3.0
MAY											
13...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
17...	--	--	--	--	--	--	--	--	--	--	--
JUL											
15...	0	6	0	12	20	0	0	0	0	1800	<6.0
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)
OCT							
04...	--	--	--	--	--	--	--
NOV							
08...	--	--	--	--	--	--	--
DEC							
11...	--	--	--	--	--	--	--
JAN							
23...	--	--	--	--	--	--	--
FEB							
13...	--	--	--	--	--	--	--
MAR							
19...	20	20	5	--	<11	<.5	16
APR							
14...	--	--	<3	--	--	--	--
MAY							
13...	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--
JUN							
17...	--	--	--	--	--	--	--
JUL							
15...	20	--	<3	27	<22	.8	<10
AUG							
20...	--	--	--	--	--	--	--
SEP							
09...	--	--	--	--	--	--	--

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT							
04...	--	--	--	11	.6	70	.53
NOV							
08...	--	--	--	12	.2	45	.49
DEC							
11...	--	--	--	22	.7	50	.59
JAN							
23...	--	--	--	15	.5	71	.54
FEB							
13...	--	--	--	14	.5	17	.15
MAR							
19...	.8	17	.8	33	1.2	15	.89
APR							
14...	--	--	--	15	.9	20	.33
MAY							
13...	--	--	--	25	.7	67	.69
30...	--	--	--	--	--	99	.59
JUN							
17...	--	--	--	22	--	122	2.9
JUL							
15...	.8	<4.9	.8	17	.8	44	.29
AUG							
20...	--	--	--	14	.5	16	.16
SEP							
09...	--	--	--	24	.6	14	.09

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
JUL										
15...	1	2	6	20	28	38	56	77	86	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
OCT					
04...	28	.840	.340	.160	.240
AUG					
20...	36	2.55	.700	1.42	2.05
SEP					
09...	20	.440	.220	.866	1.26

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 4,79	NOV 8,79	DEC 11,79	JAN 23,80	FEB 13,80	MAR 19,80
TIME	1130	1200	1430	1040	1500	1630
TOTAL CELLS/ML	2200	1000	3500	880	1900	550
DIVERSITY: DIVISION	1.6	1.2	1.9	1.2	0.3	0.7
.CLASS	1.6	1.2	1.9	1.8	0.6	0.7
..ORDER	1.7	1.5	2.3	2.4	0.6	1.1
...FAMILY	2.3	1.5	2.5	3.0	0.8	2.2
....GENUS	2.6	1.5	2.6	0.0	0.8	2.2

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	210	10	--	-	--	-	--	-	--	-	--	-
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	110	5	120	12	620#	18	55	6	14	1	40	7
....CHLORELLA	340#	15	--	-	35	1	--	-	--	-	5	1
....CHODATELLA	--	-	--	-	--	-	--	-	14	1	--	-
....DICTYOSPHAERIUM	20	1	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	20	1	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	160	7	--	-	--	-	--	-	57	3	20	4
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	30	1	41	4	380	11	24	3	--	-	15	3
CHRYSOPHYTA												
.BACILLARIOPHYCEAE	--	-	--	-	--	-	--	-	--	-	--	-
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	39	2	82	8	100	3	180#	21	57	3	25	5
....SKELETONEMA	20	1	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	27	3	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	35	1	170#	20	14	1	56	10
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	16	2	--	-	10	2
....SYNEDRA	--	-	--	-	69	2	8	1	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	8	1	--	-	15	3
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	--	-	--	-	8	1	29	1	25	5
...NITZSCHIACEAE												
....NITZSCHIA	49	2	41	4	170	5	130	14	14	1	330#	60
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	14	1	--	-
...OCHROMONADACEAE	--	-	--	-	--	-	150#	17	--	-	--	-
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...SYNURACEAE												
....SYNURA	--	-	--	-	--	-	--	-	1700#	89	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	140	4	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	OCT 4,79		NOV 8,79		DEC 11,79		JAN 23,80		FEB 13,80		MAR 19,80	
TIME	1130		1200		1430		1040		1500		1630	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	990#	45	--	-	--	-	--	-	--	-	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....SCHIZOTHRIX	--	-	--	-	--	-	39	4	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....EUTREPTIA	--	-	--	-	35	1	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	210	10	710#	69	1500#	42	78	9	--	-	10	2
...PETALOMONADACEAE												
....CALYCOMONAS	--	-	--	-	35	1	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	420	12	16	2	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 14,80	MAY 14,80	JUN 17,80	AUG 20,80	SEP 9,80
TIME	1645	1530	1445	1635	1300
TOTAL CELLS/ML	5800	9000	1000	1500	1100
DIVERSITY: DIVISION	0.4	1.3	1.1	1.5	1.6
.CLASS	1.3	1.3	1.1	1.5	1.6
..ORDER	1.4	1.4	0.0	2.0	2.3
...FAMILY	1.5	2.0	0.0	2.1	2.6
....GENUS	1.7	3.0	0.0	2.1	2.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	100	10	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	57	1	2500#	28	150#	15	52	3	39	4
....CHLORELLA	--	-	120	1	--	-	--	-	--	-
....CHODATELLA	--	-	120	1	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	740	8	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	*	0	64	6	--	-	--	-
....SELENASTRUM	--	-	*	0	--	-	--	-	52	5
....TETRAEDRON	--	-	*	0	--	-	--	-	--	-
....TREUBARIA	--	-	78	1	--	-	--	-	--	-
...SCENEDESMACEAE										
....CRUCIGENIA	--	-	620	7	52	5	--	-	--	-
....SCENEDESMUS	--	-	700	8	100	10	190	13	130	12
....TETRASTRUM	--	-	780	9	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	230	4	*	0	39	4	260#	17	450#	41
CHRYSOPHYTA										
.BACILLARIOPHYCEAE	--	-	--	-	26	3	--	-	--	-
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	1800#	31	160	2	210#	21	150	10	100	9
....SKELETONEMA	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	340	6	--	-	--	-	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....COCCONEIS	--	-	--	-	--	-	--	-	13	1
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	13	1	--	-	--	-
...NAVICULACEAE										
....GYROSIGMA	--	-	--	-	26	3	--	-	--	-
....NAVICULA	--	-	78	1	77	8	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	57	1	*	0	120	12	64	6	39	4
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...CHROMULINACEAE										
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-
...OCHROMONADACEAE	--	-	--	-	--	-	--	-	--	-
....OCHROMONAS	3200#	55	--	-	--	-	--	-	--	-
...SYNURACEAE										
....SYNURA	57	1	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE										
..HETEROCOCCALES										
...CHLOROTHECIACEAE										
....OPHIOCYTIUM	--	-	*	0	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	*	0	--	-	--	-	77	7
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06339900 SPRING CREEK NEAR HALLIDAY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	APR 14,80		MAY 14,80		JUN 17,80		AUG 20,80		SEP 9,80	
TIME	1645		1530		1445		1635		1300	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROUCOCCACEAE										
....ANACYSTIS	--	-	2600#	29	--	-	800#	52	170#	15
....COCCOCHLORIS	--	-	*	0	--	-	--	-	--	-
..HORMOGONALES										
...OSCILLATORIACEAE										
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	78	1	13	1	--	-	--	-
....EUTREPTIA	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	*	0	--	-	--	-	--	-
....TRACHELOMONAS	--	-	*	0	13	1	26	2	26	2
...PETALOMONADACEAE										
....CALYCOMONAS	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	57	1	*	0	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340000 SPRING CREEK AT ZAP, ND

LOCATION.--Lat 47°17'10", long 101°55'31", in SW¼ sec.14, T.144 N., R.89 W., Mercer County, Hydrologic Unit 10130201, on right bank 250 ft (76 m) downstream from Burlington Northern Railway bridge in Zap, and 9 mi (14 km) upstream from mouth.

DRAINAGE AREA.--549 mi² (1,422 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1924, October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,819.39 ft (554.550 m) National Geodetic Vertical Datum of 1929. Mar. 4 to Sept. 30, 1924, nonrecording gage at site 250 ft (76 m) upstream at different datum. Oct. 1, 1945, to Sept. 30, 1947, nonrecording gage 250 ft (76 m) upstream at datum 1.12 ft (0.341 m) higher.

REMARKS.--Records fair. Flow slightly regulated by Lake Ilo 56 mi (90 km) upstream, capacity, 7,130 acre-ft (8.79 hm³).

AVERAGE DISCHARGE.--35 years, 42.9 ft³/s (1.210 m³/s), 31,080 acre-ft/yr (38.3 hm³/yr); median of yearly mean discharges, 39 ft³/s (1.10 m³/s), 28,300 acre-ft/yr (35 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,130 ft³/s (174 m³/s) Apr. 7, 1952, gage height, 20.03 ft (6.105 m); maximum gage height, 20.70 ft (6.309 m) Mar. 15, 1972; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known occurred in about 1902, from ice jam. Floods of February 1913 and March 1943 reached a stage of about 20 ft (6.10 m) and 19.5 ft (5.94 m), respectively, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 310 ft³/s (8.78 m³/s) June 13, gage height, 6.60 ft (2.012 m), no peak above base of 1,000 ft³/s (28.3 m³/s); minimum daily, 3.6 ft³/s (0.10 m³/s) on several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	13	8.0	4.8	5.0	6.0	28	12	5.8	7.1	3.9	12
2	5.8	12	8.0	4.8	5.0	6.0	27	12	5.6	6.1	4.0	9.0
3	5.8	12	8.0	4.8	5.0	6.0	25	12	6.4	5.6	3.6	7.4
4	5.8	12	8.0	4.8	5.0	6.0	23	11	16	5.6	3.6	8.2
5	6.1	11	8.0	4.8	5.0	6.0	22	9.9	41	5.1	3.8	7.8
6	6.1	11	8.0	4.6	5.0	6.0	20	9.9	23	4.8	3.8	6.4
7	6.1	11	8.0	4.6	5.0	6.0	37	9.0	16	4.4	4.0	6.1
8	6.1	11	7.0	4.6	5.0	6.0	35	8.6	15	4.0	4.0	5.6
9	6.1	10	7.0	4.8	5.5	7.0	41	9.0	11	4.2	4.2	5.1
10	6.4	10	7.0	4.8	5.5	7.0	43	9.0	8.6	4.0	4.4	4.8
11	6.8	10	7.0	4.6	5.5	7.0	32	8.2	7.1	4.0	4.4	4.4
12	6.4	10	6.0	4.6	5.5	7.0	26	8.2	30	4.0	4.4	5.3
13	6.8	10	6.0	4.6	5.5	12	22	8.2	253	4.0	4.6	5.6
14	6.8	10	6.0	4.6	5.5	18	20	8.2	222	4.0	4.8	5.6
15	6.8	10	6.0	4.8	5.5	25	19	8.2	116	3.8	4.6	5.6
16	7.4	9.0	6.0	4.8	5.5	35	18	8.2	69	4.0	7.4	6.4
17	7.8	9.0	6.0	4.8	5.5	50	16	7.4	46	4.2	8.2	7.1
18	7.8	9.0	5.0	4.8	5.5	55	14	7.8	27	4.0	7.8	6.8
19	8.2	9.0	5.0	4.8	5.5	65	14	8.2	22	4.6	7.1	6.8
20	11	9.0	5.0	4.8	5.5	75	14	8.0	19	5.3	7.1	6.4
21	7.1	9.0	5.0	4.8	5.5	68	14	7.8	16	5.3	7.4	6.4
22	8.2	9.0	5.0	5.0	5.5	60	14	7.4	15	4.8	7.1	7.4
23	10	9.0	5.0	5.0	5.5	55	12	7.4	13	4.2	6.4	7.8
24	11	9.0	5.0	5.0	5.5	48	11	6.8	11	3.8	6.4	7.8
25	11	9.0	5.0	5.0	6.0	43	11	6.8	11	3.8	6.4	9.9
26	11	9.0	5.0	4.8	6.0	40	13	6.1	11	3.6	5.8	9.9
27	11	9.0	5.0	4.6	6.0	38	14	6.1	9.9	3.8	6.1	9.0
28	11	9.0	5.0	4.5	6.0	37	14	6.4	9.4	3.8	5.8	7.8
29	13	9.0	5.0	4.5	6.0	35	12	6.0	8.2	4.0	6.4	7.4
30	11	8.0	5.0	4.6	---	32	11	5.8	8.2	4.0	6.8	7.4
31	11	---	5.0	4.8	---	30	---	5.8	---	3.6	8.2	---
TOTAL	251.5	297.0	190.0	147.2	158.0	897.0	622	256.0	1072.2	137.5	172.5	213.2
MEAN	8.11	9.90	6.13	4.75	5.45	28.9	20.7	8.26	35.7	4.44	5.56	7.11
MAX	13	13	8.0	5.0	6.0	75	43	12	253	7.1	8.2	12
MIN	5.8	8.0	5.0	4.5	5.0	6.0	11	5.8	5.6	3.6	3.6	4.4
AC-FT	499	589	377	292	313	1780	1230	508	2130	273	342	423

CAL YR 1979 TOTAL 16069.7 MEAN 44.0 MAX 2410 MIN 5.0 AC-FT 31870
WTR YR 1980 TOTAL 4414.1 MEAN 12.1 MAX 253 MIN 3.6 AC-FT 8760

06340000 SPRING CREEK AT ZAP, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-70, 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT												
22...	1400	8.8	1450	8.4	--	7.0	10.7	--	400	0	75	52
NOV												
20...	0915	8.8	1880	8.4	--	.0	12.4	--	460	0	85	60
DEC												
19...	1435	5.2	2110	7.9	--	.0	10.8	--	580	0	110	75
JAN												
21...	1400	4.8	2280	7.8	--	.0	8.8	--	570	7	110	71
FEB												
26...	1100	6.1	1920	7.5	--	.5	8.3	58	550	36	110	66
MAR												
20...	1400	75	1230	--	--	.5	--	--	--	--	--	--
25...	1230	44	860	8.2	--	5.5	11.6	81	220	31	44	27
APR												
09...	1345	52	1100	--	--	2.0	--	--	--	--	--	--
22...	1205	15	1445	8.2	--	14.0	9.3	89	360	11	72	44
MAY												
29...	1015	5.9	1700	8.1	23.0	19.0	6.7	73	420	0	77	55
JUN												
05...	1130	26	2000	--	--	19.0	--	--	--	--	--	--
25...	0910	9.9	1200	8.1	--	22.5	7.0	78	330	53	69	39
JUL												
21...	1330	5.6	1480	8.4	--	20.5	8.6	94	360	0	70	45
AUG												
22...	0920	6.9	1750	8.3	32.0	17.5	7.2	75	360	0	65	47
SEP												
24...	0850	7.6	1700	8.3	--	11.5	8.6	79	370	0	67	50

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT												
22...	250	73	5.4	260	9.5	430	540	8.1	.5	8.8	1230	1200
NOV												
20...	290	74	5.9	300	7.3	470	600	8.3	.5	8.9	1340	1340
DEC												
19...	370	74	6.7	380	9.1	620	670	9.6	.4	12	1540	1630
JAN												
21...	340	56	6.2	350	11	560	710	9.2	.5	18	1670	1610
FEB												
26...	300	54	5.6	310	8.6	510	630	7.9	.6	16	1340	1450
MAR												
20...	--	--	--	--	--	--	--	--	--	--	--	--
25...	100	48	2.9	110	14	190	250	5.7	.1	9.0	607	565
APR												
09...	--	--	--	--	--	--	--	--	--	--	--	--
22...	200	54	4.6	210	9.0	350	460	6.8	.4	6.8	1040	1010
MAY												
29...	270	58	5.7	280	10	450	--	5.9	.5	11	1250	--
JUN												
05...	--	--	--	--	--	--	--	--	--	--	--	--
25...	170	52	4.1	180	10	280	410	4.5	.4	13	859	885
JUL												
21...	220	56	5.0	230	10	400	440	6.7	.7	11	1070	1040
AUG												
22...	260	61	6.0	270	8.9	390	530	7.3	.4	7.8	1180	1160
SEP												
24...	260	60	5.9	270	8.2	390	480	7.4	.5	6.1	950	1110

06340000 SPRING CREEK AT ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)
OCT											
22...	1.67	29.2	.04	.02	.02	1.1	1.1	1.1	5.0	.030	.09
NOV											
20...	1.82	31.8	.20	.08	.10	.63	.71	.91	4.0	.020	.06
DEC											
19...	2.09	21.6	.08	.11	.13	.85	.96	1.0	4.6	.020	.06
JAN											
21...	2.27	21.6	.15	.02	.02	1.2	1.2	1.4	6.0	.020	.06
FEB											
26...	1.82	22.1	.33	.20	.24	.06	.26	.59	2.6	.020	.06
MAR											
20...	--	--	--	--	--	--	--	--	--	--	--
25...	.83	72.1	.70	.40	.48	1.8	2.2	2.9	13	.340	1.0
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
22...	1.41	42.1	.00	.02	.02	.98	1.0	1.0	4.4	.060	.18
MAY											
29...	--	19.9	.01	.03	.04	1.2	1.2	1.2	5.4	.110	.34
JUN											
05...	--	--	--	--	--	--	--	--	--	--	--
25...	1.17	23.0	.17	.06	.07	1.3	1.4	1.6	7.0	.140	.43
JUL											
21...	1.46	16.2	--	--	--	--	--	--	--	--	--
AUG											
22...	1.60	22.0	.00	.00	.00	.51	.51	.51	2.3	.070	.21
SEP											
24...	1.29	19.5	.00	.00	.00	.82	.82	.82	3.6	.050	.15

DATE	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ALUM-INUM, SUS-PENDED RECOV. (UG/L AS AL) (01107)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)
OCT											
22...	--	--	--	--	--	--	--	--	--	460	--
NOV											
20...	--	--	--	--	--	--	--	--	--	490	--
DEC											
19...	0	0	0	1	0	1	0	0	0	550	0
JAN											
21...	--	--	--	--	--	--	--	--	--	600	--
FEB											
26...	--	--	--	--	--	--	--	--	--	540	--
MAR											
25...	580	560	20	1	0	1	0	0	<1	280	1
APR											
22...	--	--	--	--	--	--	--	--	--	370	--
MAY											
29...	--	--	--	--	--	--	--	--	--	480	--
JUN											
25...	--	--	--	--	--	--	--	--	--	340	--
JUL											
21...	--	--	--	--	--	--	--	--	--	390	--
AUG											
22...	--	--	--	--	--	--	--	--	--	550	--
SEP											
24...	310	300	10	2	0	2	0	0	1	480	0

06340000 SPRING CREEK AT ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE) (01044)	IRON, DISSOLVED (UG/L AS FE) (01046)
OCT 22...	--	--	--	--	--	--	--	--	--	--	--
NOV 20...	--	--	--	--	--	--	--	--	--	--	--
DEC 19...	0	0	16	16	0	0	0	0	580	570	10
JAN 21...	--	--	--	--	--	--	--	--	--	--	--
FEB 26...	--	--	--	--	--	--	--	--	--	--	--
MAR 25...	0	<1	20	20	0	5	3	2	1300	1100	170
SEP 24...	0	<1	10	10	0	9	9	0	670	670	<10

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM SUSPENDED RECOVERABLE (UG/L AS LI) (01131)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)
OCT 22...	--	--	--	--	--	--	--	--	--	--	--
NOV 20...	--	--	--	--	--	--	--	--	--	--	--
DEC 19...	1	1	0	80	0	80	130	60	70	.6	.0
JAN 21...	--	--	--	--	--	--	--	--	--	--	--
FEB 26...	--	--	--	--	--	--	--	--	--	--	--
MAR 25...	2	2	0	20	0	30	110	40	70	.0	.0
SEP 24...	5	5	0	70	0	70	100	80	20	.0	.0

DATE	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, SUSPENDED RECOV. (UG/L AS MO) (01061)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
OCT 22...	--	--	--	--	--	--	--	--	--	--	--
NOV 20...	--	--	--	--	--	--	--	--	--	--	--
DEC 19...	.6	0	0	0	0	0	2	0	0	0	.0
JAN 21...	--	--	--	--	--	--	--	--	--	--	--
FEB 26...	--	--	--	--	--	--	--	--	--	--	--
MAR 25...	.0	0	0	<10	6	6	0	0	0	0	2.0
SEP 24...	.0	3	<3	<10	8	3	5	0	0	0	3.0

06340000 SPRING CREEK AT ZAP, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, SUS- PENDED RECOV- ERABLE (UG/L AS ZN) (01091)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)
OCT 22...	--	--	--	--	--	--	--	--	--	--
NOV 20...	--	--	--	--	--	--	--	--	--	--
DEC 19...	20	10	10	--	--	--	--	--	--	--
JAN 21...	--	--	--	--	--	--	--	--	--	--
FEB 26...	--	--	--	--	--	--	--	--	--	--
MAR 25...	20	20	5	--	--	--	--	--	--	--
APR 22...	--	--	--	--	--	--	--	--	--	--
MAY 29...	--	--	--	--	--	--	--	--	--	--
JUN 25...	--	--	--	--	--	--	--	--	--	--
JUL 21...	--	--	--	--	--	--	--	--	--	--
AUG 22...	--	--	--	--	--	--	--	--	--	--
SEP 24...	30	30	<3	<15	1.2	16	1.5	15	1.5	.14

DATE	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED (MG/L AS C) (00689)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	LENGTH OF EXPO- SURE (DAYS) (00022)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
OCT 22...	--	8.2	--	--	--	--	--	--	14	.33
NOV 20...	--	26	--	--	--	30	7.35	.900	19	.45
DEC 19...	--	36	--	--	--	--	--	--	14	.20
JAN 21...	--	4.5	.3	.390	.240	33	.140	.000	17	.22
FEB 26...	--	7.0	.8	--	--	--	--	--	23	.38
MAR 25...	--	21	1.0	--	--	--	--	--	30	3.6
APR 22...	--	12	1.5	--	--	--	--	--	36	1.5
MAY 29...	--	21	1.5	5.04	3.78	37	1.29	.130	49	.78
JUN 25...	--	23	1.5	1.18	1.10	27	.070	.000	100	2.7
JUL 21...	--	18	.5	19.7	18.1	26	.000	.000	24	.36
AUG 22...	--	13	.6	30.6	27.3	32	5.02	.610	52	.97
SEP 24...	2.0	13	.8	64.6	59.4	33	11.8	1.80	22	.45

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
APR 22...	14	16	26	35	37	44	54	69	81	90	100
JUN 25...	20	28	73	91	91	93	95	97	99	100	--

06340200 WEST BRANCH OTTER CREEK NEAR BEULAH, ND

LOCATION.--Lat 47°08'05", long 101°39'35", in NW¼NW¼SW¼ sec.12, T.142 N., R.87 W., Oliver County, Hydrologic Unit 10130201, and on right bank 10 mi (16 km) southeast of Beulah.

DRAINAGE AREA.--26.5 mi² (68.6 km²).

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--15 years, 3.11 ft³/s (0.088 m³/s), 2,250 acre-ft/yr (2.77 hm³/yr); median of yearly mean discharges, 2.8 ft³/s (0.079 m³/s), 2,000 acre-ft/yr (2.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft³/s (671 m³/s) June 24, 1966, gage height, 17.2 ft (5.243 m), from floodmark, from rating curve extended above 77 ft³/s (2.18 m³/s) on basis of slope-area measurement of peak flow; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 10 ft³/s (0.28 m³/s) Mar. 18, gage height, 3.78 ft (1.152 m), backwater from ice, no peak above base of 100 ft³/s (2.83 m³/s); maximum gage height, 4.53 ft (1.381 m) Sept. 23, backwater from beaver dam; no flow on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.06	.02	.02	.02	.04	1.3	.10	.04	.02	.00	.00
2	.14	.04	.02	.02	.02	.04	1.3	.10	.02	.02	.00	.00
3	.14	.04	.02	.02	.02	.04	1.3	.10	.02	.01	.00	.00
4	.16	.04	.02	.02	.03	.04	1.2	.10	.10	.01	.00	.00
5	.16	.02	.02	.02	.03	.04	1.2	.10	.10	.01	.00	.00
6	.14	.02	.02	.02	.03	.04	1.2	.08	.06	.01	.00	.00
7	.14	.02	.02	.02	.03	.04	1.1	.08	.01	.01	.00	.00
8	.14	.02	.02	.02	.04	.04	1.1	.08	.02	.00	.00	.00
9	.14	.02	.02	.02	.04	.04	1.1	.08	.06	.00	.00	.00
10	.14	.02	.02	.02	.04	.04	.97	.08	.10	.00	.00	.00
11	.12	.02	.02	.02	.04	.04	.53	.08	.25	.00	.00	.00
12	.14	.01	.02	.02	.04	.04	.50	.08	.33	.00	.04	.00
13	.12	.01	.02	.02	.04	.05	.50	.06	.36	.00	.01	.00
14	.12	.01	.02	.02	.04	.10	.53	.02	.20	.00	.01	.00
15	.12	.01	.02	.02	.04	.50	.47	.04	2.4	.00	.00	.00
16	.08	.01	.02	.02	.04	2.0	.53	.04	1.3	.00	.00	.00
17	.08	.01	.02	.02	.04	5.0	.60	.04	.69	.00	.00	.00
18	.08	.01	.02	.02	.04	10	.60	.04	.60	.00	.00	.00
19	.10	.01	.02	.02	.04	9.5	.56	.04	.60	.00	.00	.00
20	.10	.05	.02	.02	.04	9.0	.47	.04	.56	.00	.00	.00
21	.10	.04	.02	.02	.04	8.8	.53	.04	.36	.00	.00	.00
22	.08	.03	.02	.02	.04	5.6	.20	.02	.14	.00	.00	.00
23	.08	.02	.02	.02	.04	3.5	.12	.01	.08	.00	.00	.08
24	.08	.02	.02	.02	.04	2.5	.14	.01	.04	.00	.00	.01
25	.08	.02	.02	.02	.04	2.0	.12	.01	.04	.00	.00	.00
26	.06	.02	.02	.02	.04	1.5	.12	.01	.04	.00	.00	.00
27	.06	.02	.02	.02	.04	1.5	.12	.02	.04	.00	.00	.00
28	.06	.02	.02	.02	.04	1.5	.12	.02	.04	.00	.00	.00
29	.06	.02	.02	.02	.04	1.4	.12	.04	.04	.00	.00	.00
30	.04	.02	.02	.02	---	1.4	.10	.04	.02	.00	.00	.00
31	.04	---	.02	.02	---	1.4	---	.04	---	.00	.00	---
TOTAL	3.26	.68	.62	.62	1.06	67.73	18.55	1.64	8.66	.09	.06	.09
MEAN	.11	.023	.020	.020	.037	2.18	.62	.053	.29	.003	.002	.003
MAX	.16	.06	.02	.02	.04	10	1.3	.10	2.4	.02	.04	.08
MIN	.04	.01	.02	.02	.02	.04	.10	.01	.01	.00	.00	.00
AC-FT	6.5	1.3	1.2	1.2	2.1	134	37	3.3	17	.2	.1	.2

CAL YR 1979 TOTAL 762.93 MEAN 2.09 MAX 200 MIN .00 AC-FT 1510
WTR YR 1980 TOTAL 103.06 MEAN .28 MAX 10 MIN .00 AC-FT 204

06340500 KNIFE RIVER AT HAZEN, ND

LOCATION.--Lat 47°17'07", long 101°37'18", in SW¼SE¼SE¼ sec.18, T.144 N., R.86 W., Mercer County, Hydrologic Unit 10130201, on left bank at downstream side of highway bridge, 0.5 mi (0.8 km) south of Hazen, and 3 mi (5 km) upstream from Antelope Creek.

DRAINAGE AREA.--2,240 mi^2 (5,800 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October to November 1928, March 1929 to September 1933, August 1937 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1146: 1943. WSP 1279: 1930-31, 1932-33(M). WSP 1917: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,712.35 ft (521.924 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 25, 1947, nonrecording gages at same site and datum.

REMARKS.--Records good except those for the winter period, which are fair. Small diversions above station. Slight regulation by Lake Ilo 81 mi (130 km) upstream, capacity, 7,130 acre-ft (8.79 hm^3).

AVERAGE DISCHARGE.--47 years (1929-33, 1937-80), 178 ft^3/s (5.041 m^3/s), 129,000 acre-ft/yr (159 hm^3/yr); median of yearly mean discharges, 152 ft^3/s (4.30 m^3/s), 110,100 acre-ft/yr (136 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,300 ft^3/s (1,000 m^3/s) June 24, 1966, gage height, 27.01 ft (8.233 m); no flow at times in 1933, 1959, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--According to local residents, the floods of 1943 and 1950 were not exceeded during the period 1884 to 1942.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,620 ft^3/s (45.9 m^3/s) June 15, gage height, 10.58 ft (3.225 m), only peak above base of 1,500 ft^3/s (42.5 m^3/s); minimum daily discharge, 12 ft^3/s (0.34 m^3/s) on several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	30	31	22	19	18	164	40	17	31	13	33
2	24	29	31	22	19	19	160	40	18	29	12	32
3	23	33	31	22	19	19	156	39	18	28	12	30
4	22	28	31	22	19	18	141	38	31	26	14	24
5	22	28	31	22	20	18	132	37	84	25	13	22
6	22	29	31	22	20	18	143	35	177	24	14	22
7	22	29	30	21	19	19	154	33	103	22	12	19
8	24	28	30	20	20	20	159	32	71	21	12	17
9	23	25	30	20	20	20	144	31	52	21	14	15
10	24	24	30	19	20	20	141	30	40	21	15	15
11	24	29	26	18	19	19	139	29	32	19	15	16
12	24	30	25	17	19	20	120	28	41	18	14	16
13	24	30	25	16	19	20	104	28	142	17	15	15
14	28	30	25	16	19	21	94	27	708	17	15	15
15	27	30	25	16	19	25	85	26	1310	16	16	14
16	27	31	24	16	19	284	79	26	556	16	20	14
17	27	31	24	16	19	302	75	26	303	15	22	13
18	27	31	24	16	19	221	70	25	278	15	26	16
19	27	30	24	16	19	331	68	24	170	17	22	16
20	27	45	24	16	20	325	63	23	132	18	21	15
21	28	44	24	16	20	270	59	23	120	18	17	15
22	28	34	24	16	19	242	55	21	92	17	17	16
23	26	34	24	19	19	199	53	20	72	16	16	16
24	26	34	24	22	19	159	50	19	62	16	15	17
25	26	34	24	21	19	159	48	18	54	15	15	20
26	27	34	24	20	19	206	46	19	47	15	14	18
27	29	32	24	20	19	213	45	18	41	15	14	19
28	28	31	23	20	18	209	44	16	37	15	14	19
29	27	32	23	19	18	175	42	17	35	14	16	17
30	26	31	23	19	---	156	41	17	33	12	16	16
31	28	---	23	19	---	166	---	18	---	12	22	---
TOTAL	790	940	812	586	556	3911	2874	823	4876	581	493	552
MEAN	25.5	31.3	26.2	18.9	19.2	126	95.8	26.5	163	18.7	15.9	18.4
MAX	29	45	31	22	20	331	164	40	1310	31	26	33
MIN	22	24	23	16	18	18	41	16	17	12	12	13
AC-FT	1570	1860	1610	1160	1100	7760	5700	1630	9670	1150	978	1090

CAL YR 1979 TOTAL 68814 MEAN 189 MAX 5200 MIN 20 AC-FT 136500
WTR YR 1980 TOTAL 17794 MEAN 48.6 MAX 1310 MIN 12 AC-FT 35290

06340500 KNIFE RIVER AT HAZEN, ND--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-51, 1970-71, 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,800 micromhos Feb. 20, 1977; minimum daily, 225 micromhos Mar. 24, 1978.
WATER TEMPERATURES: Maximum daily, 30.0°C July 18, 1977, July 10, 1980; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,450 micromhos Feb. 12; minimum daily, 775 micromhos June 16.
WATER TEMPERATURES: Maximum daily, 30.0°C July 10; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE, WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
OCT											
23...	0840	26	1610	8.4	1.5	4.0	5.5	11.1	--	29	K8
NOV											
20...	1435	69	1830	8.3	--	.5	10	13.4	--	--	46
DEC											
20...	1210	24	2090	8.0	5.5	.0	4.8	11.1	--	32	39
JAN											
22...	1225	15	2220	7.8	-4.0	.0	4.4	9.0	--	--	72
FEB											
26...	1645	19	2100	7.8	-2.0	.0	3.7	9.9	6	--	K15
MAR											
24...	1255	180	1350	8.3	6.5	.5	26	11.8	82	68	--
APR											
23...	1230	53	1460	8.4	17.0	16.5	26	9.5	96	32	330
MAY											
28...	1125	17	1630	8.3	28.0	21.5	26	8.2	73	34	390
JUN											
24...	1100	61	1040	8.0	26.0	23.0	190	7.0	82	56	630
JUL											
22...	1135	17	1420	8.2	28.0	22.0	14	8.0	90	50	270
AUG											
21...	0825	19	1490	8.3	18.5	17.0	17	7.8	80	31	K160
SEP											
23...	1135	15	1540	8.4	16.0	13.0	1.9	10.0	94	34	160

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)
OCT											
23...	82	360	0	74	43	230	72	5.3	240	9.1	460
NOV											
20...	58	390	0	76	48	290	76	6.4	300	7.6	510
DEC											
20...	56	460	0	92	55	370	77	7.5	380	9.4	630
JAN											
22...	61	480	0	98	56	350	61	7.0	480	10	500
FEB											
26...	150	450	0	97	50	370	64	7.6	380	8.8	630
MAR											
24...	--	240	0	47	29	240	67	6.8	250	12	320
APR											
23...	65	290	0	59	34	240	64	6.2	250	8.6	370
MAY											
28...	400	340	0	66	43	270	62	6.4	280	10	450
JUN											
24...	790	210	0	48	22	160	61	4.9	170	10	260
JUL											
22...	220	320	0	67	37	220	59	5.4	230	10	420
AUG											
21...	220	300	0	58	37	230	62	5.8	240	9.1	370
SEP											
23...	K85	310	0	63	37	250	63	6.2	260	7.9	430

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340500 KNIFE RIVER AT HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, TOTAL (MG/L AS F) (00951)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NITRATE TOTAL (MG/L AS N) (00620)
OCT										
23...	430	7.0	.1	.4	12	--	1080	1.47	77.0	.01
NOV										
20...	510	7.3	--	.4	9.9	1280	1260	1.74	238	--
DEC										
20...	550	15	.3	.4	14	1480	1490	2.01	96.3	.58
JAN										
22...	620	9.1	--	.5	17	1610	1460	2.19	69.1	--
FEB										
26...	590	7.9	--	.5	21	1520	1530	2.07	78.4	--
MAR										
24...	400	5.4	.4	.3	9.0	927	938	1.26	451	.49
APR										
23...	440	5.4	.5	.4	6.9	1020	1020	1.39	146	.00
MAY										
28...	440	7.2	.5	.4	12	1160	1120	1.58	54.5	.01
JUN										
24...	300	4.5	.3	.4	11	708	712	.96	117	.40
JUL										
22...	380	6.0	.2	.6	14	983	987	1.34	45.1	--
AUG										
21...	380	6.3	.4	.4	12	1000	955	1.36	51.8	--
SEP										
23...	380	6.7	1.2	.4	11	1150	1020	1.56	47.8	.01

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)
OCT										
23...	.02	.03	.02	.04	.03	.04	1.1	.28	1.1	.79
NOV										
20...	--	.46	.19	.11	.06	.08	.66	.50	.77	.21
DEC										
20...	.01	.59	.06	.14	.12	.15	.73	.61	.87	.14
JAN										
22...	--	.14	.15	.24	.24	.31	.96	.23	1.2	.73
FEB										
26...	--	.33	.32	.27	.26	.33	.10	.11	.37	.00
MAR										
24...	.04	.53	.56	.30	.27	.35	1.7	1.2	2.0	.50
APR										
23...	.00	.00	.00	.06	.00	.00	1.3	1.3	1.4	.10
MAY										
28...	.01	.02	.02	.01	.03	.04	.99	.58	1.0	.39
JUN										
24...	.05	.45	.45	.01	.01	.01	1.7	.99	1.7	.70
JUL										
22...	--	.00	.00	.00	.00	.00	1.1	.50	1.1	.60
AUG										
21...	.01	.00	.00	.00	.00	.00	.59	.49	.59	.10
SEP										
23...	.00	.01	.00	.00	.00	.00	1.0	.72	1.0	.28

06340500 KNIFE RIVER AT HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ALUM-INUM, SUS-PENDED RECOV. (UG/L AS AL) (01107)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)
OCT 23...	.31	1.1	.33	5.0	.020	.06	.000	130	--	--
NOV 20...	.56	1.2	.75	5.4	.040	.12	.010	--	--	--
DEC 20...	.73	1.5	.79	6.5	.080	.25	.030	0	0	10
JAN 22...	.47	1.3	.62	5.9	.020	.06	.010	--	--	--
FEB 26...	.37	.70	.69	3.1	.000	.00	.000	--	--	--
MAR 24...	1.5	2.5	2.1	11	.340	1.0	.210	1000	1000	0
APR 23...	1.3	1.4	1.3	6.2	.080	.25	.010	300	--	--
MAY 28...	.61	1.0	.63	4.5	.100	.31	.020	350	--	--
JUN 24...	1.0	2.2	1.5	9.5	.190	.58	.040	1400	1400	20
JUL 22...	.50	1.1	.50	4.9	.080	.25	.030	320	--	--
AUG 21...	.49	.59	.49	2.6	.060	.18	.020	210	--	--
SEP 23...	.72	1.0	.72	4.5	.070	.21	.030	210	200	10

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
OCT 23...	2	--	--	300	--	--	0	--	--	340
NOV 20...	--	--	--	--	--	--	--	--	--	--
DEC 20...	1	0	1	500	300	200	0	0	0	420
MAR 24...	2	1	1	100	40	60	0	0	<1	270
APR 23...	2	--	--	100	--	--	0	--	--	310
MAY 28...	2	--	--	100	--	--	0	--	--	350
JUN 24...	4	2	2	100	10	90	0	0	<1	210
JUL 22...	2	--	--	200	--	--	0	--	--	350
AUG 21...	3	--	--	0	--	--	0	--	--	350
SEP 23...	2	0	2	100	0	100	10	10	<1	110

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)
OCT 23...	0	--	--	0	--	--	0	--	--	0	--
NOV 20...	--	--	--	--	--	--	--	--	--	--	--
DEC 20...	1	1	0	16	16	0	0	0	0	5	5
MAR 24...	2	1	<1	20	20	0	4	<4	<3	8	4
APR 23...	1	--	--	0	--	--	0	--	--	6	--
MAY 28...	1	--	--	0	--	--	2	--	--	4	--
JUN 24...	1	1	<1	10	10	0	2	<2	<3	16	12
JUL 22...	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	0	--	--	0	--	--	0	--	--	6	--
SEP 23...	0	0	<1	10	0	20	1	1	<3	8	7

06340500 KNIFE RIVER AT HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, SUS- PENDED RECOV- ERABLE (UG/L AS FE) (01044)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, SUS- PENDED RECOV- ERABLE (UG/L AS PB) (01050)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM SUS- PENDED RECOV- ERABLE (UG/L AS LI) (01131)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
OCT 23...	--	330	--	--	0	--	--	50	--	--	120
NOV 20...	--	--	--	--	--	--	--	--	--	--	--
DEC 20...	0	580	560	20	0	0	0	60	0	60	170
MAR 24...	4	2100	2000	140	23	23	0	40	0	40	160
APR 23...	--	1600	--	--	5	--	--	40	--	--	300
MAY 28...	--	910	--	--	2	--	--	50	--	--	280
JUN 24...	4	7600	7600	30	8	8	0	30	10	20	190
JUL 22...	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	630	--	--	4	--	--	50	--	--	160
SEP 23...	1	660	650	10	8	8	0	50	0	50	150

DATE	MANGA- NESE, SUS- PENDED RECOV. (UG/L AS MN) (01054)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY SUS- PENDED RECOV- ERABLE (UG/L AS HG) (71895)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, SUS- PENDED RECOV. (UG/L AS MO) (01061)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, SUS- PENDED RECOV- ERABLE (UG/L AS NI) (01066)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)
OCT 23...	--	--	.1	--	--	0	--	--	5	--	--
NOV 20...	--	--	--	--	--	--	--	--	--	--	--
DEC 20...	50	120	.8	.8	.0	0	0	0	4	1	3
MAR 24...	80	80	.0	.0	.0	2	0	<10	8	8	1
APR 23...	--	--	.1	--	--	3	--	--	5	--	--
MAY 28...	--	--	.2	--	--	4	--	--	7	--	--
JUN 24...	180	9	.1	.1	.0	4	1	3	13	6	6
JUL 22...	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	--	--	.1	--	--	3	--	--	4	--	--
SEP 23...	100	50	.1	.1	.0	2	<2	<10	6	2	4

DATE	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, SUS- PENDED TOTAL (UG/L AS SE) (01146)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, SUS- PENDED RECOV- ERABLE (UG/L AS AG) (01076)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, SUS- PENDED RECOV- ERABLE (UG/L AS ZN) (01091)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)
OCT 23...	0	--	--	0	--	--	--	0	--	--	--
NOV 20...	--	--	--	--	--	--	--	--	--	--	--
DEC 20...	0	0	0	0	0	0	.0	30	10	20	--
JAN 22...	--	--	--	0	--	--	--	--	--	--	--
FEB 26...	--	--	--	--	--	--	--	--	--	--	--
MAR 24...	0	0	0	1	1	0	2.0	60	40	20	--
APR 23...	0	--	--	0	--	--	--	30	--	--	--
MAY 28...	0	--	--	0	--	--	--	30	--	--	--
JUN 24...	1	1	0	0	0	0	7.0	140	140	<3	--
JUL 22...	--	--	--	0	--	--	--	--	--	--	--
AUG 21...	0	--	--	0	--	--	--	40	--	--	--
SEP 23...	0	0	0	0	0	0	4.0	50	50	<3	<13

06340500 KNIFE RIVER AT HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT 23...	--	--	--	--	--	--	6.1	5.9	.2	--
NOV 20...	--	--	--	--	--	--	15	--	--	--
DEC 20...	--	--	--	--	--	--	--	16	.5	.00
JAN 22...	--	--	--	--	--	--	5.4	--	--	--
FEB 26...	--	--	--	--	--	--	2.9	--	--	--
MAR 24...	--	--	--	--	--	--	27	25	1.5	.00
APR 23...	--	--	--	--	--	--	21	--	--	--
MAY 28...	--	--	--	--	--	--	19	--	--	--
JUN 24...	--	--	--	--	--	--	--	16	1.6	.00
JUL 22...	--	--	--	--	--	--	21	--	--	--
AUG 21...	--	--	--	--	--	--	17	--	--	--
SEP 23...	.5	12	.7	12	.7	.08	--	11	1.1	.00

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 23...	--	--	--	--	--	--	11	.78	90
NOV 20...	3800	--	--	--	--	--	55	10	96
DEC 20...	--	--	--	--	--	--	9	.59	87
JAN 22...	--	.390	.240	.510	.000	33	12	.52	63
FEB 26...	--	--	--	--	--	--	19	.98	86
MAR 24...	2100	--	--	--	--	--	76	37	86
APR 23...	--	--	--	--	--	--	51	7.3	91
MAY 28...	89000	10.7	8.03	1.68	.130	35	34	1.6	91
JUN 24...	2800	--	--	--	--	--	270	44	99
JUL 22...	29000	7.56	5.43	.000	.000	28	30	1.4	95
AUG 21...	36000	6.61	5.12	1.48	.060	30	63	3.3	96
SEP 23...	45000	8.98	7.32	2.54	.170	33	36	1.5	96

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MG/L	DEGREES, C	SATURATION, %
Aug. 21, 1980			
1400	9.2	22.0	104
1500	9.2	22.5	105
1600	9.3	23.0	107
1700	9.3	23.0	107
1800	9.1	22.5	104
1900	8.7	21.5	97
2000	8.4	21.0	93
2100	8.0	20.5	88
2200	7.9	20.0	86
2300	7.8	19.5	84
2400	7.8	19.0	83

DATE	MG/L	DEGREES, C	SATURATION, %
Aug. 22, 1980			
0100	7.7	18.5	81
0200	7.6	18.0	79
0300	7.6	17.5	79
0400	7.6	17.5	79
0500	7.6	17.0	78
0600	7.6	16.5	77
0700	7.7	16.5	78
0800	7.9	16.5	80
0900	8.0	16.5	81
1000	8.3	17.5	86
1100	8.6	19.0	91
1200	8.7	20.0	94
1300	8.8	21.0	97
1400	8.9	22.0	100

06340500 KNIFE RIVER AT HAZEN, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1500	1480	2000	2250	2200	2230	1200	1500	1450	1160	1450	1500
2	1500	1450	1980	2180	2200	2200	1130	1430	1480	1180	1400	1480
3	1430	1380	2000	2100	2380	2200	1130	1430	1480	1200	1400	1500
4	1480	1400	1930	2130	2400	2150	1100	1350	1530	1250	1380	1500
5	1480	1480	1950	2200	2330	2180	1150	1550	1580	1180	1420	1420
6	1500	1580	1980	2230	2330	2200	1150	1600	1700	1200	1280	1460
7	1450	1700	---	2250	2350	2300	1000	1580	1600	1300	1420	1340
8	1400	1650	---	2280	2380	2280	1030	1600	1200	1400	1300	1500
9	1430	1630	1950	2300	2400	2300	1100	1630	1530	1420	1360	1420
10	1380	1600	1900	2250	2380	2300	1130	1630	1600	1500	1300	1460
11	1380	1630	1980	2250	2430	2350	1180	1630	1380	1400	1300	1460
12	1380	1680	1930	2230	2450	2300	1150	1650	1180	1300	1440	1480
13	1400	1580	1900	2230	2380	2300	1200	1600	1200	1340	1420	1480
14	1400	1750	1980	2200	2300	2230	---	1550	1450	1360	1400	1460
15	1430	1700	2030	---	2330	2200	---	1550	800	1380	1380	1480
16	1430	1700	2000	2300	2350	1600	1230	1580	775	1380	1400	1460
17	1400	1700	2000	2280	2300	1300	1280	1580	650	1380	1400	1480
18	1430	1730	2030	2250	2350	1100	1300	1600	800	1380	1460	1480
19	1430	1750	2080	2200	2280	875	1300	1500	875	1300	1400	1460
20	1400	1830	2050	2200	2280	1000	1350	1530	850	1320	1400	1460
21	1380	1850	2030	2150	2300	950	1400	1530	950	1340	1480	1480
22	1330	1850	2050	2200	2280	1100	1400	1500	1030	---	1460	1460
23	1380	1850	2030	2100	2250	1130	1430	1450	975	1400	1400	1460
24	1400	1900	2000	2050	2280	1450	1480	1480	1020	1400	1460	1440
25	1430	1930	2150	2050	2280	1400	1500	1480	1000	1380	1320	1460
26	1400	1900	2150	2080	2300	1400	1500	1460	1020	1430	1480	1460
27	1400	1900	2150	2080	2300	1480	1530	1500	1080	1430	1420	1460
28	1380	---	2180	2100	2230	1500	1530	1450	1080	1280	1400	1440
29	1450	---	2150	2150	2200	1380	1500	1480	1080	1400	1440	1460
30	1500	2000	2130	2150	---	1200	1530	1450	1100	1350	1400	1480
31	1480	---	2180	2180	---	1130	---	1430	---	1430	1400	---
MEAN	1420	1700	2030	2190	2320	1730	1280	1530	1190	1340	1400	1460

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	4.0	.0	.0	.0	.0	2.5	20.0	23.0	22.5	22.0	21.0
2	15.0	4.0	.0	.0	.0	.0	3.0	19.0	23.0	24.0	22.0	21.0
3	11.0	3.0	.0	.0	.0	.0	2.0	18.0	25.0	25.0	20.0	17.5
4	11.5	2.0	.0	.0	.0	.0	2.0	17.0	20.0	25.0	17.0	21.0
5	10.0	3.0	.0	.0	.0	.0	2.5	15.0	23.0	26.0	16.0	23.0
6	10.0	2.0	.0	.0	.0	.0	6.0	18.0	22.0	26.0	22.0	18.0
7	10.0	1.0	---	.0	.0	.0	3.0	17.5	20.0	28.0	21.0	19.0
8	11.5	.5	---	.0	.0	.0	3.0	18.0	17.0	23.0	24.0	17.5
9	11.0	.5	.0	.0	.0	.0	7.0	18.0	24.0	24.0	19.0	20.0
10	14.0	1.0	.0	.0	.0	.0	5.0	15.0	24.0	30.0	21.0	21.0
11	13.5	1.0	.0	.0	.0	.0	6.0	17.0	24.0	27.0	25.0	20.0
12	10.0	1.5	.0	.0	.0	.0	5.0	15.0	26.0	24.0	22.0	20.0
13	6.5	1.0	.0	.0	.0	.0	3.0	16.0	26.0	24.0	19.0	20.0
14	10.0	2.0	.0	.0	.0	.0	---	12.0	22.0	27.0	20.0	19.0
15	12.0	3.0	.0	---	.0	.0	---	14.0	20.0	25.0	19.0	16.0
16	9.0	4.5	.0	.0	.0	.5	12.0	13.0	23.0	28.0	17.0	15.0
17	11.0	5.5	.0	.0	.0	.5	15.0	15.0	24.0	25.0	13.5	16.0
18	11.0	3.0	.0	.0	.0	1.0	14.0	16.0	21.0	27.0	26.0	14.0
19	10.5	3.5	.0	.0	.0	1.5	12.5	15.0	22.0	18.0	27.0	17.0
20	8.0	1.0	.0	.0	.0	1.0	14.0	18.0	24.0	20.0	20.5	16.0
21	8.5	1.5	.0	.0	.0	1.0	19.0	22.0	21.0	21.0	22.0	16.0
22	8.0	1.0	.0	.0	.0	1.0	16.0	26.0	23.0	---	22.5	16.0
23	7.5	.5	.0	.0	.0	1.0	18.0	24.0	26.0	29.5	23.5	17.0
24	8.0	.5	.0	.0	.0	1.5	17.0	20.0	25.5	28.0	22.0	15.0
25	8.0	.0	.0	.0	.0	1.5	17.0	21.0	27.0	29.0	23.5	13.0
26	9.0	.5	.0	.0	.0	2.0	16.0	16.0	21.0	24.0	18.0	12.0
27	7.0	.0	.0	.0	.0	2.0	15.0	22.0	20.0	24.0	19.0	11.0
28	8.0	---	.0	.0	.0	2.0	21.0	23.0	18.0	21.0	19.0	13.0
29	7.5	---	.0	.0	.0	3.0	17.0	21.0	23.0	21.0	21.0	19.0
30	7.5	.0	.0	.0	---	4.0	18.0	22.0	25.0	22.0	20.0	19.0
31	5.0	---	.0	.0	---	3.5	---	20.0	---	22.0	18.0	---
MEAN	10.0	2.0	.0	.0	.0	1.0	10.5	18.0	23.0	24.5	20.5	17.5

06340500 KNIFE RIVER AT HAZEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 20,79		MAR 24,80		MAY 28,80		JUN 24,80	
TIME	1435		1255		1125		1100	
TOTAL CELLS/ML	3800		2100		89000		2800	
DIVERSITY: DIVISION	1.6		0.9		1.3		1.5	
.CLASS	1.6		0.9		1.3		1.5	
..ORDER	1.8		1.3		2.0		2.1	
...FAMILY	2.4		2.3		2.3		3.1	
....GENUS	2.8		2.4		2.8		3.7	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	24	1	--	-	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	230	8
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	90	3
....MICRACTINIUM	--	-	--	-	--	-	100	4
...OOCYSTACEAE								
....ANKISTRODESMUS	1200#	30	120	6	8400	9	77	3
....CHLORELLA	210	6	--	-	480	1	64	2
....CHODATELLA	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	13000	14	150	6
....KIRCHNERIELLA	95	2	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	*	0	77	3
....SELENASTRUM	--	-	--	-	480	1	52	2
....TETRAEDRON	--	-	--	-	*	0	26	1
....TREUBARIA	--	-	--	-	--	-	*	0
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	1900	2	--	-
....SCENEDESMUS	--	-	39	2	5800	6	460#	17
....TETRASTRUM	95	2	--	-	--	-	100	4
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	1900	2	*	0
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	79	4	--	-	120	4
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	190	5	59	3	1700	2	340	12
....MELOSIRA	--	-	--	-	720	1	*	0
....SKELETONEMA	--	-	39	2	--	-	--	-
..PENNALES								
...CYMBELLACEAE								
....CYMBELLA	24	1	--	-	--	-	--	-
...DIATOMACEAE								
....DIATOMA	--	-	20	1	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	47	1	--	-	--	-	--	-
....SYNEDRA	170	4	140	6	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	20	1	--	-	--	-
...NAVICULACEAE								
....NAVICULA	140	4	59	3	--	-	--	-
....PLEUROSIGMA	--	-	20	1	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	610#	16	1300#	59	960	1	77	3
...SURIRELLACEAE								
....SURIRELLA	--	-	140	6	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....KEPHYRIOPSIS	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06340500 KNIFE RIVER AT HAZEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	NOV 20,79 1435		MAR 24,80 1255		MAY 28,80 1125		JUN 24,80 1100	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	22000#	25	360	13
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	28000#	32	--	-
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	390	14
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	*	0
....TRACHELOMONAS	1000#	27	34	2	2900	3	*	0
...PETALOMONADACEAE								
....CALYCOMONAS	24	1	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	99	5	--	-	--	-
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	*	0
...PERIDINIACEAE								
....PERIDINIUM	--	-	20	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340500 KNIFE RIVER AT HAZEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUL 22,80	AUG 21,80	SEP 23,80
TIME	1035	0825	1135
TOTAL CELLS/ML	29000	36000	45000
DIVERSITY: DIVISION	1.6	0.9	1.1
.CLASS	1.6	0.9	1.1
..ORDER	2.0	1.6	1.6
...FAMILY	2.5	1.8	1.8
....GENUS	3.3	1.9	2.1

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHLOROCOCCACEAE						
....CHLOROCOCCUM	--	-	--	-	--	-
...COELASTRACEAE						
....COELASTRUM	440	1	180	1	--	-
...HYDRODICTYACEAE						
....PEDIASTRUM	--	-	--	-	--	-
...MICRACTINIACEAE						
....GOLENKINIA	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	540	2	730	2	1200	3
....CHLORELLA	--	-	--	-	--	-
....CHODATELLA	650	2	*	0	--	-
....DICTYOSPHAERIUM	2200	7	--	-	1600	4
....KIRCHNERIELLA	--	-	--	-	--	-
....OOCYSTIS	870	3	*	0	--	-
....SELENASTRUM	--	-	--	-	*	0
....TETRAEDRON	*	0	*	0	*	0
....TREUBARIA	--	-	*	0	*	0
...SCENEDESMACEAE						
....ACTINASTRUM	440	1	--	-	--	-
....CRUCIGENIA	2800	10	730	2	4400	10
....SCENEDESMUS	2400	8	2300	6	2000	5
....TETRASTRUM	1300	4	490	1	--	-
..TETRASPORALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	*	0	--	-	--	-
....CHLAMYDOMONAS	*	0	180	1	440	1
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	2100	7	240	1	440	1
....MELOSIRA	2400	8	--	-	*	0
....SKELETONEMA	--	-	--	-	--	-
..PENNALES						
...CYMBELLACEAE						
....CYMBELLA	--	-	--	-	--	-
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....FRAGILARIA	--	-	--	-	--	-
....SYNEDRA	--	-	*	0	--	-
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	--	-	*	0
....PLEUROSIGMA	--	-	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	1200	4	790	2	*	0
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
...OCHROMONADACEAE						
....KEPHYRIOPSIS	*	0	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	*	0	180	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06340500 KNIFE RIVER AT HAZEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	JUL 22,80 1035		AUG 21,80 0825		SEP 23,80 1135	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	10000#	35	6500#	18	4700	10
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	--	-
...OSCILLATORIACEAE						
....LYNGBYA	870	3	--	-	--	-
....OSCILLATORIA	--	-	23000#	63	27000#	61
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	220	1	--	-	--	-
....TRACHELOMONAS	*	0	730	2	1800	4
...PETALOMONADACEAE						
....CALYCOMONAS	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..GYMNODINIALES						
...GYMNODINIACEAE						
....GYMNODINIUM	--	-	--	-	--	-
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	--	-	--	-
...PERIDINIACEAE						
....PERIDINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340520 ANTELOPE CREEK ABOVE HAZEN, ND

LOCATION.--Lat 47°20'07", long 101°41'41", in SE¼SE¼NE¼ sec.36, T.145 N., R.87 W., Mercer County, Hydrologic Unit 10130201, on left bank about 100 ft (30 m) upstream from bridge on county road, 4.2 mi (6.8 km) northeast of Hazen, and 2.0 mi (3.2 km) upstream from Schramm Dam.

DRAINAGE AREA.--25.6 mi² (66.3 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,800 ft (549 m), from topographic map.

REMARKS.--Records good except those for the period March 15 to April 15, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 700 ft³/s (19.8 m³/s) Apr. 17, 1979, gage height, 6.70 ft (2.042 m); maximum gage height, 8.95 ft (2.728 m) Mar. 21, 1978, ice jam; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29 ft³/s (0.83 m³/s) Mar. 19, gage height, 3.76 ft (1.146 m), backwater from ice, no peak above base of 50 ft³/s (1.42 m³/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.02	.07	.03	.00	.02	2.9	.17	.00	.00	.00	.00
2	.00	.02	.08	.03	.01	.01	2.7	.17	.00	.00	.00	.00
3	.00	.02	.08	.03	.01	.01	2.5	.13	.00	.00	.00	.00
4	.00	.02	.09	.03	.01	.00	2.6	.11	.00	.00	.00	.00
5	.00	.02	.10	.03	.00	.00	2.8	.10	.00	.00	.00	.00
6	.00	.02	.10	.02	.00	.00	3.0	.09	.00	.00	.00	.00
7	.00	.02	.09	.02	.00	.00	2.7	.07	.00	.00	.00	.00
8	.00	.02	.08	.01	.00	.00	1.5	.06	.00	.00	.00	.00
9	.00	.02	.10	.00	.01	.00	1.6	.05	.00	.00	.00	.00
10	.00	.02	.10	.00	.01	.00	1.8	.04	.00	.00	.00	.00
11	.00	.02	.09	.00	.01	.00	2.0	.03	.00	.00	.00	.00
12	.00	.02	.06	.00	.01	.00	1.6	.04	.00	.00	.00	.00
13	.00	.02	.04	.01	.01	.04	1.2	.02	.01	.00	.00	.00
14	.00	.02	.02	.02	.01	.20	1.0	.02	.00	.00	.00	.00
15	.00	.03	.01	.02	.01	.40	.90	.01	.00	.00	.00	.00
16	.00	.04	.01	.02	.02	1.0	.68	.01	.00	.00	.00	.00
17	.00	.05	.01	.02	.02	4.0	.62	.00	.00	.00	.00	.00
18	.00	.06	.02	.02	.02	10	.54	.00	.00	.00	.00	.00
19	.00	.07	.06	.02	.02	29	.45	.00	.00	.00	.00	.00
20	.00	.08	.05	.02	.02	15	.34	.00	.00	.00	.00	.00
21	.00	.09	.04	.02	.02	8.8	.26	.00	.00	.00	.00	.00
22	.00	.10	.03	.02	.02	6.0	.21	.00	.00	.00	.00	.00
23	.00	.10	.03	.02	.02	5.0	.17	.00	.00	.00	.00	.00
24	.00	.10	.02	.02	.02	4.0	.17	.00	.00	.00	.00	.00
25	.01	.10	.02	.01	.02	3.2	.15	.00	.00	.00	.00	.00
26	.02	.10	.03	.01	.02	2.7	.15	.00	.00	.00	.00	.00
27	.02	.09	.04	.01	.02	2.5	.19	.00	.00	.00	.00	.00
28	.02	.08	.04	.01	.02	2.6	.19	.00	.00	.00	.00	.00
29	.02	.08	.04	.00	.02	2.7	.20	.00	.00	.00	.00	.00
30	.02	.08	.04	.00	---	2.9	.19	.00	.00	.00	.00	.00
31	.02	---	.03	.00	---	3.0	---	.00	---	.00	.00	---
TOTAL	.13	1.53	1.62	.47	.38	103.08	35.31	1.12	.01	.00	.00	.00
MEAN	.004	.051	.052	.015	.013	3.33	1.18	.036	.000	.000	.000	.000
MAX	.02	.10	.10	.03	.02	29	3.0	.17	.01	.00	.00	.00
MIN	.00	.02	.01	.00	.00	.00	.15	.00	.00	.00	.00	.00
AC-FT	.3	3.0	3.2	.9	.8	204	70	2.2	.02	.00	.00	.00

CAL YR 1979 TOTAL 1562.40 MEAN 4.28 MAX 456 MIN .00 AC-FT 3100
WTR YR 1980 TOTAL 143.65 MEAN .39 MAX 29 MIN .00 AC-FT 285

06340520 ANTELOPE CREEK ABOVE HAZEN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV												
15...	0855	.03	2480	8.2	5.5	1.0	11.5	86	23	250	530	0
DEC												
05...	1445	.09	3180	8.5	4.0	1.0	12.0	92	42	950	400	0
MAR												
19...	1305	29	--	--	1.5	.0	--	--	--	--	--	--
21...	0905	8.8	567	7.9	-1.0	.0	11.6	85	K25	K35000	120	0
APR												
15...	0820	.91	1590	8.4	8.5	7.0	10.8	95	K1	K5	310	0
MAY												
08...	1140	.07	2070	8.5	12.0	11.5	12.2	117	34	98	410	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV												
15...	85	77	440	68	8.3	14	847	0	694	8.6	740	28
DEC												
05...	58	61	740	91	16	14	1300	29	1120	6.9	790	10
MAR												
19...	--	--	--	--	--	--	--	--	--	--	--	--
21...	23	15	66	50	2.9	17	146	0	120	2.9	150	5.4
APR												
15...	56	40	260	64	7.3	11	471	6	396	3.1	500	8.4
MAY												
08...	68	59	340	63	8.3	12	595	14	512	3.2	560	11

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
NOV												
15...	.2	8.3	1760	1810	2.39	.14	1.8	1.8	.16	.19	1.9	2.1
DEC												
05...	.3	8.1	2260	2350	3.07	.55	.81	.58	.12	.15	1.7	1.8
MAR												
19...	--	--	--	--	--	--	--	--	--	--	--	--
21...	.0	7.9	404	361	.55	9.64	.95	.94	.59	.71	2.4	3.0
APR												
15...	.2	7.6	1120	1120	1.52	2.75	.06	.07	.10	.12	.77	.87
MAY												
08...	.2	1.6	1400	1360	1.90	.26	.01	.02	.04	.05	1.7	1.7

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340520 ANTELOPE CREEK ABOVE HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)
NOV 15...	3.9	17	.080	.25	.070	--	--	--	--	--	--
DEC 05...	2.6	12	.170	.52	.030	--	--	--	--	--	--
MAR 19...	--	--	--	--	--	--	--	--	--	--	--
21...	4.0	17	.680	2.1	.630	70	2	0	5	0	0
APR 15...	.93	4.1	.100	.31	.060	0	--	--	--	--	--
MAY 08...	1.7	7.6	.070	.21	.030	0	3	0	52	100	30

DATE	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, SUSPENDED RECOV. (UG/L AS BE) (01011)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)
NOV 15...	--	--	--	--	--	--	300	--	--	--	--
DEC 05...	--	--	--	--	--	--	430	--	--	--	--
MAR 19...	--	--	--	--	--	--	--	--	--	--	--
21...	40	160	0	0	<1	0	170	0	0	0	8
APR 15...	70	--	--	--	<1	--	220	--	--	0	--
MAY 08...	70	150	0	--	<1	0	200	0	0	0	5

DATE	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM SUSPENDED RECOVERABLE (UG/L AS LI) (01131)
NOV 15...	--	--	--	--	--	--	--	--	30	--	--
DEC 05...	--	--	--	--	--	--	--	--	50	--	--
MAR 19...	--	--	--	--	--	--	--	--	--	--	--
21...	2	0	<3	0	7	0	<10	10	240	20	0
APR 15...	--	--	<3	--	--	--	<10	--	90	--	--
MAY 08...	2	--	<3	10	8	--	<10	6	30	70	0

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, SUSPENDED RECOV. (UG/L AS MO) (01061)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)
NOV 15...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
MAR 19...	--	--	--	--	--	--	--	--	--	--	--
21...	20	160	30	130	.2	.3	.0	.03	2	0	<10
APR 15...	57	--	--	28	--	.1	--	--	--	--	<10
MAY 08...	71	70	40	27	.1	.0	.1	.08	1	--	<10

06340520 ANTELOPE CREEK ABOVE HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
NOV											
15...	--	--	--	--	--	--	--	--	--	--	--
DEC											
05...	--	--	--	--	--	--	--	--	--	--	--
MAR											
19...	--	--	--	--	--	--	--	--	--	--	--
21...	3	5	5	0	20	0	0	0	0	340	<6.0
APR											
15...	--	--	--	4	--	--	--	0	--	930	<3.0
MAY											
08...	1	13	11	2	20	1	0	1	0	1000	<6.0

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
NOV							
15...	--	--	--	--	--	--	--
DEC							
05...	--	--	--	--	--	--	--
MAR							
19...	--	--	--	--	--	--	--
21...	40	30	9	35	<5.4	.9	15
APR							
15...	--	--	<3	--	--	--	--
MAY							
08...	30	--	<3	25	<15	<.4	12

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV							
15...	--	--	--	28	.4	10	.00
DEC							
05...	--	--	--	29	.8	53	.01
MAR							
19...	--	--	--	--	--	51	4.0
21...	.8	16	.9	33	2.1	42	1.0
APR							
15...	--	--	--	16	.7	25	.06
MAY							
08...	<.4	11	<.4	24	.9	11	.00

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAR										
21...	35	44	58	72	76	81	88	92	95	100

06340520 ANTELOPE CREEK ABOVE HAZEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO MAY 1980

DATE	NOV 15,79	DEC 5,79	MAR 21,80	APR 15,80	MAY 8,80
TIME	0855	1445	0905	0820	1140
TOTAL CELLS/ML	6900	14000	190	11000	5900
DIVERSITY: DIVISION	1.7	1.0	1.6	1.3	1.7
.CLASS	1.7	1.2	1.6	1.3	2.0
..ORDER	2.0	1.2	2.3	2.1	2.4
...FAMILY	2.6	1.7	3.2	2.4	0.0
....GENUS	3.3	2.6	3.2	2.4	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES	--	-	--	-	--	-	--	-	110	2
...MICRACTINIACEAE										
....MICRACTINIUM	--	-	180	1	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	910	13	1200	9	10	5	430	4	420	7
....CHODATELLA	*	0	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	3100#	22	--	-	--	-	650	11
....KIRCHNERIELLA	530	8	2600#	19	--	-	--	-	110	2
....OOCYSTIS	*	0	--	-	--	-	--	-	76	1
....SELENASTRUM	230	3	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	90	1	--	-	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	850	12	--	-	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-	150	3
....SCENEDESMUS	470	7	180	1	40#	21	--	-	76	1
....TETRASTRUM	170	2	1300	10	--	-	350	3	150	3
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERIA	--	-	--	-	--	-	--	-	38	1
....CHLAMYDOMONAS	230	3	--	-	15	8	430	4	230	4
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	280	4	720	5	25	13	3100#	29	1700#	28
..PENNALES										
...DIATOMACEAE										
....DIATOMA	--	-	--	-	5	3	--	-	--	-
...FRAGILARIACEAE										
....SYNEDRA	--	-	--	-	25	13	86	1	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	5	3	--	-	--	-
...NAVICULACEAE										
....NAVICULA	--	-	--	-	5	3	520	5	76	1
....PINNULARIA	--	-	--	-	--	-	--	-	38	1
...NITZSCHIACEAE										
....NITZSCHIA	85	1	--	-	35#	18	4300#	40	150	3
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...CHROMULINACEAE										
....CHRYSOCOCCUS	--	-	4200#	31	--	-	--	-	460	8
...OCHROMONADACEAE										
....KEPHYRIOPSIS	--	-	--	-	--	-	--	-	38	1
....STENOCALYX	--	-	--	-	--	-	--	-	76	1
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	86	1	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	42	1	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	85	1	--	-	--	-	950	9	1200#	21
..HORMOGONALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	1300#	19	--	-	--	-	--	-	--	-
....SPIRULINA	--	-	--	-	5	3	--	-	--	-
...RIVULARIACEAE										
....RAPHIDIOPSIS	130	2	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	5	3	--	-	38	1
....TRACHELOMONAS	1500#	22	90	1	--	-	600	6	76	1
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	--	-	15	8	--	-	38	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340524 WEST BRANCH ANTELOPE CREEK NO. 5 NEAR ZAP, ND
(Formerly published as Antelope Creek Tributary No. 5 near Zap, ND)

LOCATION.--Lat 47°23'10", long 101°50'04", in NE¼NE¼SE¼ sec.20, T.145 N., R.88 W., Mercer County, Hydrologic Unit 10130301, on left bank upstream from culvert on county highway, and 5.5 mi (8.9 km) north of Zap.

DRAINAGE AREA.--4.52 mi² (11.71 km²), revised.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year. Prior to October 1979, published as Antelope Creek Tributary No. 5 near Zap.

GAGE.--Water-stage recorder.

REMARKS.--Records good. Some regulation by stock dams upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 435 ft³/s (12.3 m³/s) Apr. 17, 1979, gage height, 9.78 ft (2.981 m); no flow for many months.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11 ft³/s (0.31 m³/s) Mar. 18, gage height, 2.13 ft (0.649 m), only peak above base of 10 ft³/s (0.28 m³/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	1.7	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	5.1	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	4.1	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	1.6	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.79	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	14.64	.11	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.47	.004	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	5.1	.03	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	29	.2	.00	.00	.00	.00	.00

CAL YR 1979 TOTAL 273.53 MEAN .75 MAX 142 MIN .00 AC-FT 543
WTR YR 1980 TOTAL 14.75 MEAN .040 MAX 5.1 MIN .00 AC-FT 29

06340524 WEST BRANCH ANTELOPE CREEK NO. 5 NEAR ZAP, ND--Continued
(Formerly published as Antelope Creek Tributary No. 5 near Zap, ND)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR										
17...	1600	.45	220	--	.0	--	--	--	--	--
18...	1635	6.6	150	7.0	.0	52	13	12	5.3	3.1
20...	1535	2.2	145	--	1.0	--	--	--	--	--
21...	1340	.65	180	--	2.0	--	--	--	--	--
25...	1215	.20	240	--	4.0	--	--	--	--	--
27...	1145	.20	255	6.8	3.5	110	28	24	12	4.6
31...	1500	.02	350	--	10.0	--	--	--	--	--
APR										
04...	1040	.01	450	--	9.0	--	--	--	--	--
08...	1005	.01	480	--	6.0	--	--	--	--	--
10...	1220	.03	625	--	12.5	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
MAR										
17...	--	--	--	--	--	--	--	--	--	--
18...	9	.2	15	39	21	17	.0	5.4	103	.14
20...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
27...	7	.2	13	81	40	5.3	.1	12	160	.22
31...	--	--	--	--	--	--	--	--	--	--
APR										
04...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR									
17...	--	--	--	--	--	--	--	36	.04
18...	1.84	3.2	190	130	30	<10	40	36	.64
20...	--	--	--	--	--	--	--	40	.24
21...	--	--	--	--	--	--	--	42	.07
25...	--	--	--	--	--	--	--	28	.02
27...	.09	1.8	100	180	20	<10	80	26	.01
31...	--	--	--	--	--	--	--	14	.00
APR									
04...	--	--	--	--	--	--	--	16	.00
08...	--	--	--	--	--	--	--	30	.00
10...	--	--	--	--	--	--	--	23	.00

06340528 WEST BRANCH ANTELOPE CREEK NO. 4 NEAR ZAP, ND
(Formerly published as Antelope Creek Tributary No. 4 near Zap, ND)

LOCATION.--Lat 47°21'21", long 101°51'16", in the NW¼NW¼NE¼ sec.26, T.145 N., R.88 W., Mercer County, Hydrologic Unit 10130201, on left bank upstream from culvert, and 6.0 mi (9.7 km) northeast of Zap.

DRAINAGE AREA.--8.53 mi² (22.93 km²), revised.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1976 to current year. Prior to Oct. 1978, published as Antelope Creek Tributary No. 4 near Zap.

GAGE.--Water-stage recorder.

REMARKS.--Records fair. Some regulation by stock dams above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 650 ft³/s (18.4 m³/s) Apr. 17, 1979, gage height, 9.66 ft (2.944 m); no flow for several months each year.

EXTREMES FOR CURRENT PERIOD.--Water year 1979: Peak discharges above base of 10 ft³/s (0.28 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 11	—	35	0.99	Backwater from ice		Apr. 17	2300	*650	18.4	9.66	2.944

No flow for many months.

Water year 1980: Maximum discharge, 21 ft³/s (0.59 m³/s) Mar. 18, gage height, 3.43 ft (1.045 m), only peak above base of 10 ft³/s (0.28 m³/s); no flow for most of the time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.65	.03	.02	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.54	.02	.01	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.49	.02	.01	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.46	.02	.01	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.49	.01	.01	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.82	.01	.01	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.77	.01	.01	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.57	.01	.01	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.49	.01	.01	.00	.00
10	.00	.00	.00	.00	.00	.00	5.0	.44	.01	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	25	.39	.01	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	3.0	.32	.01	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	1.0	.30	.01	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	1.0	.29	.01	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.50	.27	.01	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	53	.27	.01	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	140	.24	.01	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	136	.20	.02	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	19	.31	.02	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	5.2	.35	.01	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	3.8	.31	.03	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	3.8	.23	.02	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	2.8	.18	.02	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	1.8	.14	.02	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	1.5	.11	.02	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	1.3	.08	.01	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	1.1	.06	.01	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	1.1	.05	.01	.00	.00	.00
29	.00	.00	.00	.00	---	.00	1.0	.04	.01	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.82	.04	.01	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.03	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	407.72	9.93	.43	.10	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	13.6	.32	.014	.003	.000	.000
MAX	.00	.00	.00	.00	.00	.00	140	.82	.03	.02	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.03	.01	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	809	20	.9	.2	.00	.00

WTR YR 1979 TOTAL 418.18 MEAN 1.15 MAX 140 MIN .00 AC-FT 829

06340528 WEST BRANCH ANTELOPE CREEK NO. 4 NEAR ZAP, ND--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.19	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.22	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.01	.08	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.01	.09	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.70	.08	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.05	.05	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.90	.04	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	4.5	.03	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	9.3	.02	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	3.1	.02	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	2.2	.01	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	1.2	.01	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.72	.01	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.49	.01	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.95	.01	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.80	.01	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.76	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.66	.01	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.49	.01	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.49	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.33	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	27.68	2.48	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.89	.083	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	9.3	.24	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	55	4.9	.00	.00	.00	.00	.00

CAL YR 1979 TOTAL 418.18 MEAN 1.15 MAX 140 MIN .00 AC-FT 829
WTR YR 1980 TOTAL 30.16 MEAN .082 MAX 9.3 MIN .00 AC-FT 60

06340528 WEST BRANCH ANTELOPE CREEK NO. 4 NEAR ZAP, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L) AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L) CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L) AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L) AS NA) (00930)
APR										
10...	1215	1.7	410	--	1.0	--	--	--	--	--
11...	1218	6.6	340	--	1.0	--	--	--	--	--
16...	1359	13	340	--	2.0	--	--	--	--	--
17...	1100	--	140	7.4	1.5	45	19	9.9	4.9	4.7
17...	1515	--	70	--	1.0	--	--	--	--	--
17...	1700	--	90	--	1.0	--	--	--	--	--
17...	1850	--	65	--	.5	--	--	--	--	--
18...	1145	125	110	--	6.0	--	--	--	--	--
18...	1430	--	--	--	--	--	--	--	--	--
19...	1312	13	340	--	6.0	--	--	--	--	--
20...	1305	5.0	565	7.4	9.8	210	94	46	24	29
23...	1440	1.8	925	--	6.0	--	--	--	--	--
30...	1325	.72	1250	--	7.0	--	--	--	--	--
MAY										
08...	1233	.55	1300	--	6.0	--	--	--	--	--
JUN										
15...	1000	.01	1400	7.7	15.5	530	270	130	50	120

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L) AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L) AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L) AS SIO2) (00955)	SOLIDS SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
APR										
17...	16	.3	6.8	26	20	2.1	.0	5.2	70	.10
20...	22	.9	7.4	120	160	4.2	.1	11	354	.48
JUN										
15...	44	2.4	6.5	260	500	5.6	.3	11	981	1.33

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L) AS N) (00623)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L) AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L) AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
APR									
10...	--	--	--	--	--	--	--	20	.09
11...	--	--	--	--	--	--	--	37	.66
16...	--	--	--	--	--	--	--	59	2.1
17...	--	1.1	60	180	40	<10	60	87	--
17...	--	--	--	--	--	--	--	201	--
17...	--	--	--	--	--	--	--	296	--
17...	--	--	--	--	--	--	--	325	--
18...	--	--	--	--	--	--	--	248	84
18...	--	--	--	--	--	--	--	114	--
19...	--	--	--	--	--	--	--	54	2.0
20...	4.78	.95	50	70	120	<10	330	28	.38
23...	--	--	--	--	--	--	--	8	.04
JUN									
15...	.03	.44	190	20	50	0	1200	--	--

DATE	TYPE	TIME	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
APR					
17...	2	1515	60	88	100

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L) AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L) CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L) AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L) AS NA) (00930)
MAR										
17...	1400	.85	320	--	.5	--	--	--	--	--
18...	1315	4.3	400	--	1.0	--	--	--	--	--
19...	1215	8.6	170	7.7	.0	64	19	14	7.0	5.5
20...	1250	3.4	200	--	.5	--	--	--	--	--
21...	1500	2.3	210	--	1.0	--	--	--	--	--
25...	1120	.62	440	--	1.0	--	--	--	--	--
31...	1240	.21	560	7.0	2.0	240	100	52	27	42
APR										
04...	1145	.14	625	--	5.0	--	--	--	--	--
08...	1125	.14	780	--	5.0	--	--	--	--	--
17...	1055	.04	1100	--	13.0	--	--	--	--	--
22...	1200	.01	1230	--	14.5	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L) AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L) AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L) AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L) AS SIO2) (00955)	SOLIDS SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
MAR										
17...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
19...	13	.3	13	45	35	5.0	.0	7.2	114	.16
31...	27	1.2	8.5	140	190	3.6	.2	10	418	.57

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L) AS N) (00623)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L) AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L) AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR									
17...	--	--	--	--	--	--	--	22	.05
18...	--	--	--	--	--	--	--	35	.41
19...	2.65	12	160	280	40	<10	70	42	.98
20...	--	--	--	--	--	--	--	32	.29
21...	--	--	--	--	--	--	--	35	.22
25...	--	--	--	--	--	--	--	14	.02
31...	.24	1.0	80	110	40	<10	380	6	.00
APR									
04...	--	--	--	--	--	--	--	4	.00
08...	--	--	--	--	--	--	--	4	.00
17...	--	--	--	--	--	--	--	12	.00

06340536 WEST BRANCH ANTELOPE CREEK NO. 2 NEAR BEULAH, ND
(Formerly published as Antelope Creek Tributary No. 2 near Beulah, ND)

LOCATION.--Lat 47°19'45", long 101°47'06", in SW¼SE¼SE¼ sec.32, T.145 N., R.87 W., Mercer County, Hydrologic Unit 10130201, on left bank 30 ft (9.14 m) downstream from county highway box culvert, and 4 mi (6.4 km) north of Beulah.

DRAINAGE AREA.--28.3 mi² (73.3 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1976 to current year. Prior to October 1979 published as Antelope Creek Tributary No. 2 near Beulah.

GAGE.--Water-stage recorder.

REMARKS.--Records are poor. Some channelization and regulation one mile upstream due to mining efforts.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 543 ft³/s (15.4 m³/s) Apr. 17, 1979, gage height, 8.33 ft (2.539 m); no flow for many months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35 ft³/s (0.99 m³/s) Mar. 19, gage height, 5.72 ft (1.743 m) from floodmark, only peak above base of 25 ft³/s (0.71 m³/s); no flow for many months

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.83	.00	.00	.00	.00	.80
2	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.60
3	.00	.00	.00	.00	.00	.00	.45	.00	.00	.00	.00	.50
4	.00	.00	.00	.00	.00	.00	.32	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.45	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	1.3	.00	.00	.00
15	.00	.00	.00	.00	.00	1.0	.00	.00	.55	.00	.00	.00
16	.00	.00	.00	.00	.00	.50	.02	.00	.04	.00	.00	.00
17	.00	.00	.00	.00	.00	4.0	.71	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	5.0	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	24	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	12	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	7.0	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	4.0	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.80	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	1.9	---	.00	---	.00	1.0	---
TOTAL	.00	.00	.00	.00	.00	64.20	4.72	.00	1.89	.00	1.00	1.90
MEAN	.000	.000	.000	.000	.000	2.07	.16	.000	.063	.000	.032	.063
MAX	.00	.00	.00	.00	.00	24	.83	.00	1.3	.00	1.0	.80
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	127	9.4	.00	3.7	.00	2.0	3.8

CAL YR 1979 TOTAL 1135.16 MEAN 3.11 MAX 343 MIN .00 AC-FT 2250
WTR YR 1980 TOTAL 73.71 MEAN .20 MAX 24 MIN .00 AC-FT 146

06340536 WEST BRANCH ANTELOPE CREEK NO. 2 NEAR BEULAH, ND--Continued
(Formerly published as Antelope Creek Tributary No. 2 near Beulah, ND)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to September 1980 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
MAR										
18...	1107	2.2	360	--	1.0	--	--	--	--	--
19...	1530	29	175	6.8	.5	86	18	19	9.4	21
20...	1100	12	240	--	1.0	--	--	--	--	--
25...	1410	.49	460	--	4.0	--	--	--	--	--
27...	1410	.17	520	7.0	5.5	140	0	32	15	70
31...	1530	2.2	680	--	8.0	--	--	--	--	--
APR										
08...	1233	.20	890	--	9.0	--	--	--	--	--
17...	1250	.60	860	--	15.0	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
MAR										
18...	--	--	--	--	--	--	--	--	--	--
19...	31	1.0	13	68	61	4.8	.0	7.1	177	.24
20...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
27...	50	2.6	10	160	140	5.7	.2	9.4	379	.52
31...	--	--	--	--	--	--	--	--	--	--
APR										
08...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR									
18...	--	--	--	--	--	--	--	63	.40
19...	13.9	2.7	200	280	30	<10	130	278	22
20...	--	--	--	--	--	--	--	102	3.3
25...	--	--	--	--	--	--	--	203	.27
27...	.17	1.2	130	90	20	<10	250	62	.03
31...	--	--	--	--	--	--	--	--	--
APR									
08...	--	--	--	--	--	--	--	49	.03
17...	--	--	--	--	--	--	--	129	.21

06340540 WEST BRANCH ANTELOPE CREEK NEAR HAZEN, ND
(Formerly published as Antelope Creek Tributary near Hazen, ND)

LOCATION.--Lat 47°19'00", long 101°41'27", in NE¼SE¼SW¼ sec.3, T.144 N., R.87 W., Mercer County, Hydrologic Unit 10130201, on right bank 50 ft (15 m) upstream from bridge on county road, 600 ft (183 m) upstream from mouth, and 3.2 mi (5.1 km) northwest of Hazen.

DRAINAGE AREA.--37.7 mi^2 (97.6 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year. Prior to October 1979, published as Antelope Creek Tributary near Hazen.

GAGE.--Water-stage recorder. Altitude of gage is 1,780 ft (543 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 508 ft^3/s (14.4 m^3/s) Apr. 18, 1979, gage height, 11.93 ft (3.636 m); no flow much of the time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25 ft^3/s (0.71 m^3/s) Mar. 20, gage height, 6.65 ft (2.027 m), only peak above base of 15 ft^3/s (0.42 m^3/s); no flow for most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	2.2	.00	.00	.00	.00	.25
2	.00	.00	.00	.00	.00	.00	1.9	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	1.9	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	1.9	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	2.2	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	2.5	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	3.5	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	2.9	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	2.5	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	2.8	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	3.0	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	1.6	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.20	.20	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.50	.10	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	2.0	.01	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	5.0	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	16	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	6.0	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	5.0	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	4.0	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	2.3	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	2.3	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	4.3	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	4.6	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	2.9	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	2.5	---	.00	---	.00	.48	---
TOTAL	.00	.00	.00	.00	.00	77.60	30.71	.00	.00	.00	.48	.25
MEAN	.000	.000	.000	.000	.000	2.50	1.02	.000	.000	.000	.015	.008
MAX	.00	.00	.00	.00	.00	16	3.5	.00	.00	.00	.48	.25
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	154	61	.00	.00	.00	1.0	.5

CAL YR 1979 TOTAL 1106.10 MEAN 3.03 MAX 418 MIN .00 AC-FT 2190
WTR YR 1980 TOTAL 109.04 MEAN .30 MAX 16 MIN .00 AC-FT 216

06340540 WEST BRANCH ANTELOPE CREEK NEAR HAZEN, ND--Continued
(Formerly published as Antelope Creek Tributary near Hazen, ND)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
MAR												
19...	1450	12	492	7.7	3.5	.0	11.2	84	190	K33000	97	0
26...	1245	2.4	--	--	8.0	1.5	--	--	--	--	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
MAR												
19...	19	12	60	53	3.0	14	137	0	112	4.4	120	4.1
26...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
MAR												
19...	.0	7.3	338	308	.46	11.6	.83	.83	.37	.45	1.9	2.3
26...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
MAR											
19...	3.1	14	.750	2.3	.630	70	2	0	6	200	200
26...	--	--	--	--	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340540 WEST BRANCH ANTELOPE CREEK NEAR HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, SUS- PENDED RECOV. (UG/L AS BE) (01011)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BERYL- LIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01013)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, SUS- PENDED RECOV. (UG/L AS CR) (01031)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)
MAR											
19...	50	100	0	0	<1	1	170	0	0	0	10
26...	--	--	--	--	--	--	--	--	--	--	--

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, SUS- PENDED RECOV- ERABLE (UG/L AS CO) (01036)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU) (01041)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM SUS- PENDED RECOV- ERABLE (UG/L AS LI) (01131)
MAR											
19...	3	0	<3	0	10	0	<10	27	230	19	0
26...	--	--	--	--	--	--	--	--	--	--	--

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, SUS- PENDED RECOV. (UG/L AS MN) (01054)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY SUS- PENDED RECOV- ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG) (71921)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, SUS- PENDED RECOV. (UG/L AS MO) (01061)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)
MAR											
19...	15	130	30	190	.4	.6	.0	.04	2	0	<10
26...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, SUS- PENDED RECOV- ERABLE (UG/L AS NI) (01066)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, SUS- PENDED TOTAL (UG/L AS SE) (01146)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) (01148)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
MAR											
19...	7	6	5	1	28	0	0	0	0	240	<6.0
26...	--	--	--	--	--	--	--	--	--	--	--

06340540 WEST BRANCH ANTELOPE CREEK NEAR HAZEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, SUS- PENDED RECOV- ERABLE (UG/L AS ZN) (01091)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)
MAR							
19...	60	50	10	81	<4.7	3.2	14
26...	--	--	--	--	--	--	--

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED (MG/L AS C) (00689)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
MAR							
19...	1.7	14	1.7	24	1.4	49	1.7
26...	--	--	--	--	--	74	.48

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)
MAR		
19...	96	100

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO MARCH 1980

DATE	MAR 19,80
TIME	1450
TOTAL CELLS/ML	30
DIVERSITY: DIVISION	0.9
.CLASS	0.9
..ORDER	1.5
...FAMILY	1.5
....GENUS	1.5

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...OOCYSTACEAE		
....ANKISTRODESMUS	15#	50
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	5#	17
CHRYSOPHYTA		
.BACILLARIOPHYCEAE		
..PENNALES		
...NAVICULACEAE ✓		
....NAVICULA	10#	33

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340580 COAL CREEK NEAR STANTON, ND

LOCATION.--Lat 47°20'03", long 101°31'38", in SE¼NE¼SE¼ sec.32, T.145 N., R.85 W., Mercer County, Hydrologic Unit 10130201, on right bank 60 ft (18.3 m) upstream from bridge, on county road 6.3 mi (10.1 km) west of Stanton, 5.3 mi (8.5 km) northwest of Hazen, and 1.1 mi (1.8 km) upstream from mouth.

DRAINAGE AREA.--15.8 mi² (40.9 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,710 ft (521 m), from topographic map. Prior to Oct. 1, 1979 at datum 10.00 ft (3.05 m) lower.

REMARKS.--Records fair except those for the winter period, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 476 ft³/s (13.5 m³/s) Apr. 17, 1979, gage height, 8.40 ft (2.560 m); maximum gage height, 8.67 ft (2.643 m) Mar. 22, 1978, ice jam; no flow on many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23 ft³/s (0.65 m³/s) June 12, gage height, 11.77 ft (3.588 m), no peak above base of 30 ft³/s (0.85 m³/s); maximum observed gage height, 12.51 ft (3.813 m) Mar. 20, ice jam; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.09	.08	.05	.00	.00	3.6	.20	.00	.00	.00	1.1
2	.00	.09	.08	.03	.00	.00	2.8	.18	.00	.00	.00	.28
3	.00	.08	.08	.00	.00	.00	2.6	.15	.00	.00	.00	.12
4	.00	.08	.08	.00	.00	.00	2.3	.15	.00	.00	.25	.08
5	.00	.08	.08	.00	.00	.00	2.8	.13	.00	.00	.05	.02
6	.00	.09	.10	.00	.00	.00	3.2	.05	.00	.00	.00	.00
7	.00	.09	.15	.00	.00	.00	3.8	.03	.00	.00	.00	.00
8	.00	.08	.13	.00	.00	.00	3.6	.03	.00	.00	.00	.00
9	.00	.06	.05	.00	.00	.00	3.0	.02	.00	.00	.00	.00
10	.00	.08	.05	.00	.00	.00	3.0	.02	.00	.00	.00	.00
11	.00	.08	.05	.00	.00	.00	2.6	.02	.00	.00	.00	.00
12	.00	.08	.03	.00	.00	.00	2.1	.00	6.5	.00	.00	.00
13	.00	.12	.03	.00	.00	.00	1.8	.00	3.0	.00	.00	.00
14	.00	.15	.04	.00	.00	.00	1.6	.00	1.6	.00	.00	.00
15	.00	.15	.06	.00	.00	.10	1.5	.00	.76	.00	.00	.00
16	.00	.18	.09	.00	.00	.30	1.3	.00	.76	.00	.00	.00
17	.00	.20	.13	.00	.00	.80	1.3	.00	.51	.00	.02	.00
18	.00	.20	.16	.00	.00	2.0	1.1	.00	.34	.00	.10	.00
19	.00	.18	.18	.00	.00	10	.86	.00	.25	.00	.02	.00
20	.05	.18	.20	.00	.00	8.0	.86	.00	.18	.00	.02	.00
21	.08	.15	.17	.00	.00	6.0	.67	.00	.15	.00	.05	.00
22	.04	.15	.13	.00	.00	5.3	.67	.00	.05	.00	.08	.00
23	.03	.12	.10	.00	.00	4.8	.45	.00	.00	.00	.02	.00
24	.03	.10	.08	.00	.00	4.5	.39	.00	.00	.00	.00	.00
25	.06	.10	.06	.00	.00	4.4	.34	.00	.00	.00	.00	.00
26	.10	.08	.06	.00	.00	4.3	.30	.00	.00	.00	.00	.00
27	.10	.08	.07	.00	.00	3.7	.28	.00	.00	.00	.00	.05
28	.08	.08	.07	.00	.00	3.5	.25	.00	.00	.00	.00	.05
29	.08	.08	.08	.00	.00	3.2	.22	.00	.00	.00	.00	.02
30	.08	.08	.08	.00	---	4.5	.22	.00	.00	.00	.00	.00
31	.09	---	.07	.00	---	4.0	---	.00	---	.00	.03	---
TOTAL	.82	3.36	2.82	.08	.00	69.40	49.51	.98	14.10	.00	.64	1.72
MEAN	.026	.11	.091	.003	.000	2.24	1.65	.032	.47	.000	.021	.057
MAX	.10	.20	.20	.05	.00	10	3.8	.20	6.5	.00	.25	1.1
MIN	.00	.06	.03	.00	.00	.00	.22	.00	.00	.00	.00	.00
AC-FT	1.6	6.7	5.6	.2	.00	138	98	1.9	28	.00	1.3	3.4

CAL YR 1979 TOTAL 970.83 MEAN 2.66 MAX 179 MIN .00 AC-FT 1930
WTR YR 1980 TOTAL 143.43 MEAN .39 MAX 10 MIN .00 AC-FT 284

06340580 COAL CREEK NEAR STANTON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BUNATE (MG/L CACO3) (00902)
NOV												
14...	1455	.14	3100	8.4	12.5	1.0	12.5	94	K520	350	650	0
DEC												
05...	1030	.10	3150	8.3	3.0	.0	11.9	88	K18	150	630	0
MAR												
20...	0815	8.1	--	--	-2.0	.0	--	--	--	--	--	--
21...	1430	5.9	710	7.9	5.5	.0	10.2	75	K29	K12000	130	0
APR												
15...	1715	1.6	1820	8.4	16.5	12.0	10.5	103	K1	52	350	0
MAY												
08...	0745	.03	2440	8.7	4.5	4.5	11.0	89	24	80	430	0
AUG												
22...	0745	.08	1420	8.3	13.5	15.0	6.2	64	K600	420	190	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV												
14...	94	100	580	65	9.9	16	991	14	836	6.5	970	18
DEC												
05...	91	97	600	67	10	23	1100	0	902	8.8	1000	14
MAR												
20...	--	--	--	--	--	--	--	--	--	--	--	--
21...	24	16	100	61	4.4	12	188	0	154	3.8	210	4.1
APR												
15...	58	49	310	65	8.3	10	573	11	488	3.8	530	8.0
MAY												
08...	64	65	450	69	11	13	847	29	742	2.9	630	10
AUG												
22...	31	27	250	74	7.9	1.2	446	0	366	3.6	370	8.5

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
NOV												
14...	.3	16	2270	2300	3.09	.86	.15	.04	.08	.10	1.3	1.4
DEC												
05...	.3	20	2380	2390	3.24	.64	.03	.02	.05	.06	1.3	1.3
MAR												
20...	--	--	--	--	--	--	--	--	--	--	--	--
21...	.0	8.6	494	471	.67	7.90	.65	.60	.12	.15	1.6	1.7
APR												
15...	.3	11	1290	1270	1.75	5.57	.02	.02	.00	.00	1.5	1.5
MAY												
08...	.2	4.7	1720	1690	2.34	.14	.01	.01	.01	.01	1.2	1.2
AUG												
22...	.3	9.4	976	918	1.33	.21	.00	.02	.23	.28	2.0	2.2

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340580 COAL CREEK NEAR STANTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
NOV 14...	1.6	6.9	.110	.34	.000	--	--	--	--	--	--
DEC 05...	1.3	5.9	.080	.25	.010	--	--	--	--	--	--
MAR 20...	--	--	--	--	--	--	--	--	--	--	--
21...	2.4	10	.440	1.4	.360	90	2	0	7	0	0
APR 15...	1.5	6.7	.080	.25	.060	30	--	--	--	--	--
MAY 08...	1.2	5.4	.080	.25	.060	10	4	0	20	100	40
AUG 22...	2.2	9.7	.390	1.2	.350	--	--	--	--	--	--

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
NOV 14...	--	--	--	--	--	--	430	--	--	--	--
DEC 05...	--	--	--	--	--	--	390	--	--	--	--
MAR 20...	--	--	--	--	--	--	--	--	--	--	--
21...	50	120	0	0	<1	1	160	10	10	0	10
APR 15...	70	--	--	--	<1	--	270	--	--	0	--
MAY 08...	60	100	0	--	<3	0	400	0	0	0	5
AUG 22...	--	--	--	--	--	--	330	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
NOV 14...	--	--	--	--	--	--	--	--	50	--	--
DEC 05...	--	--	--	--	--	--	--	--	40	--	--
MAR 20...	--	--	--	--	--	--	--	--	--	--	--
21...	3	0	<3	0	7	0	<10	21	200	20	0
APR 15...	--	--	<3	--	--	--	<10	--	59	--	--
MAY 08...	2	--	<8	10	4	--	<25	6	27	110	0
AUG 22...	--	--	--	--	--	--	--	--	470	--	--

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
NOV 14...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
MAR 20...	--	--	--	--	--	--	--	--	--	--	--
21...	27	130	40	87	.3	.4	.0	.04	2	0	<10
APR 15...	83	--	--	13	--	.1	--	--	--	--	<10
MAY 08...	110	50	20	28	.1	.1	.0	.03	1	--	<25
AUG 22...	--	--	--	--	--	--	--	--	--	--	--

06340580 COAL CREEK NEAR STANTON, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
NOV											
14...	--	--	--	--	--	--	--	--	--	--	--
DEC											
05...	--	--	--	--	--	--	--	--	--	--	--
MAR											
20...	--	--	--	--	--	--	--	--	--	--	--
21...	3	4	4	0	20	0	0	0	0	420	<6.0
APR											
15...	--	--	--	3	--	--	--	1	--	1500	<3.0
MAY											
08...	4	7	3	4	20	0	0	0	0	1800	<8.0
AUG											
22...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
NOV							
14...	--	--	--	--	--	--	--
DEC							
05...	--	--	--	--	--	--	--
MAR							
20...	--	--	--	--	--	--	--
21...	40	30	6	46	<7.1	1.8	8.6
APR							
15...	--	--	<3	--	--	--	--
MAY							
08...	20	--	<8	20	<18	<.4	<12
AUG							
22...	--	--	--	--	--	--	--

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV							
14...	--	--	--	27	.1	81	.03
DEC							
05...	--	--	--	41	.5	123	.03
MAR							
20...	--	--	--	--	--	40	.87
21...	1.5	8.9	1.5	24	1.7	45	.72
APR							
15...	--	--	--	27	.4	43	.19
MAY							
08...	<.4	<12	<.4	41	.4	6	.00
AUG							
22...	--	--	--	29	.6	14	.00

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)
MAR			
21...	89	97	100

06340580 COAL CREEK NEAR STANTON, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

DATE	NOV 14,79	DEC 5,79	MAR 21,80	APR 15,80	MAY 8,80	AUG 22,80
TIME	1455	1030	1430	1715	0745	0745
TOTAL CELLS/ML	950	4300	140	660	72	1600
DIVERSITY: DIVISION	1.1	0.7	1.0	1.4	0.7	1.3
.CLASS	1.8	1.1	1.0	1.4	1.4	1.3
..ORDER	2.0	1.3	1.8	1.7	1.4	1.4
...FAMILY	2.0	1.4	2.4	2.8	1.4	2.0
....GENUS	0.0	1.5	2.4	2.8	1.4	2.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...OOCYSTACEAE												
....ANKISTRODESMUS	230#	24	370	9	43#	30	51	8	--	-	--	-
....KIRCHNERIELLA	43	5	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	170	4	--	-	--	-	--	-	13	1
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	120	7
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	29	3	41	1	29#	20	51	8	14#	20	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	14	10	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE	43	5	--	-	--	-	--	-	--	-	--	-
....CYCLOTELLA	190#	20	83	2	--	-	--	-	14#	20	13	1
....MELOSIRA	29	3	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....RHOICOSPHENIA	--	-	--	-	14	10	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	29#	20	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	210#	31	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	13	2	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	41	1	--	-	--	-	--	-	--	-
....NAVICULA	--	-	41	1	14	10	26	4	--	-	480#	31
...NITZSCHIACEAE												
....NITZSCHIA	14	2	170	4	--	-	140#	22	--	-	390#	25
...SURIRELLACEAE												
....SURIRELLA	--	-	170	4	--	-	26	4	--	-	13	1
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	330#	35	3100#	74	--	-	--	-	43#	60	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	13	2	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	43	5	--	-	--	-	26	4	--	-	13	1
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	100#	16	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	530#	34
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	41	1	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340700 MISSOURI RIVER NEAR STANTON, ND

LOCATION.--Lat 47°17'14", long 101°20'25", in SW¼ sec.16, T.144 N., R.84 W., McLean County, Hydrologic Unit 10130101, on right bank 3 mi (5 km) southeast of Stanton, 0.1 mi (0.2 km) below Ft. Clark irrigation pumping station, 0.4 mi (0.6 km) above the United Power Association power plant, and at mile 1,372 (2,208 km).

DRAINAGE AREA.--182,000 mi² (471,400 km²), approximately.

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,650.00 ft (502.920 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 50.00 ft (15.240 m) lower.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 24.56 ft (7.486 m) Feb. 22, 1965; minimum daily recorded, 10.73 ft (3.270 m) May 7, 1978.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.87	12.11	12.42	13.94	---	15.47	13.50	12.82	13.12	13.95	14.37	13.94
2	12.28	11.85	12.20	14.08	---	15.50	13.30	12.85	13.35	13.92	14.45	13.99
3	12.50	11.90	12.20	14.02	---	15.47	13.45	12.88	13.48	13.96	13.99	13.69
4	12.96	12.10	12.30	13.20	---	15.25	13.12	13.00	13.58	13.92	13.97	13.92
5	12.47	12.08	12.60	13.00	---	15.26	13.32	12.74	13.40	13.92	13.99	13.66
6	12.42	12.04	12.40	13.00	---	15.32	13.22	12.79	13.32	13.92	14.24	13.77
7	12.42	12.04	12.83	13.88	---	15.32	13.40	12.95	13.50	14.26	14.44	13.68
8	12.58	12.22	12.89	14.30	---	15.34	13.24	13.00	13.62	14.58	14.29	13.72
9	12.36	12.07	12.44	15.52	---	15.30	12.62	12.94	13.31	15.06	14.49	13.60
10	12.27	12.04	13.25	15.40	---	15.30	13.45	12.82	13.32	15.08	14.87	13.54
11	12.21	11.94	13.72	15.88	---	15.35	13.34	12.34	13.23	15.04	13.79	13.74
12	12.26	12.11	14.49	15.94	---	15.40	13.44	13.24	13.51	15.34	13.73	13.56
13	12.13	12.03	14.61	16.00	---	15.38	13.32	12.82	13.32	15.06	13.93	13.53
14	12.33	12.14	14.65	15.90	---	15.40	13.32	12.75	13.25	15.02	13.97	13.52
15	12.27	11.65	14.24	15.70	---	15.60	13.46	12.96	2.98	14.95	13.97	13.74
16	12.13	12.35	---	15.66	---	15.02	13.39	12.92	13.98	14.81	14.05	13.71
17	12.38	12.07	---	15.70	---	15.48	13.43	12.84	13.25	15.19	13.87	13.52
18	12.20	12.24	---	15.78	---	15.40	13.44	12.87	---	14.91	14.10	13.71
19	12.30	12.27	12.73	16.04	---	15.38	13.30	12.97	---	15.17	14.19	13.85
20	12.04	12.14	12.92	16.18	---	15.34	13.27	12.97	---	15.59	14.03	13.86
21	12.16	12.18	12.83	16.20	---	---	13.22	13.02	---	15.45	14.01	13.72
22	12.34	12.46	13.31	---	15.48	---	13.61	13.00	---	14.64	14.00	13.62
23	12.33	12.00	13.34	---	15.52	---	13.10	12.90	---	14.70	---	12.73
24	12.18	12.24	13.36	---	15.19	---	13.23	13.15	---	14.44	---	13.87
25	12.00	12.00	13.42	---	15.35	---	13.29	13.29	---	14.26	---	13.58
26	11.90	12.24	13.32	---	15.40	---	13.31	13.34	---	14.10	---	13.65
27	12.06	12.92	13.40	---	15.40	13.48	13.50	13.21	13.87	14.43	---	13.39
28	11.71	12.34	13.88	---	15.38	13.68	13.24	13.12	13.97	14.05	---	13.47
29	12.00	12.30	13.70	---	15.45	13.78	13.02	13.46	13.93	14.05	13.81	13.75
30	12.07	12.00	13.75	---	---	13.68	12.85	13.31	13.99	14.11	14.00	13.38
31	11.94	---	13.97	---	---	13.80	---	13.11	---	13.93	14.18	---
TOTAL	380.07	364.07	---	---	---	---	398.70	402.38	---	451.81	---	409.41
MEAN	12.26	12.14	---	---	---	---	13.29	12.98	---	14.57	---	13.65
MAX	12.96	12.92	---	---	---	---	13.61	13.46	---	15.59	---	13.99
MIN	11.71	11.65	---	---	---	---	12.62	12.34	---	13.92	---	12.73

06340780 ALDERIN CREEK NEAR FORT CLARK, ND

LOCATION.--Lat 47°16'09", long 101°18'34", in NW¼NW¼NE¼ sec.27, T.144 N., R.84 W., Mercer County, Hydrologic Unit 10130101, on left bank 80 ft (24 m) upstream from box culvert on North Dakota Highway 200-A, 3.5 mi (5.6 km) northwest of Ft. Clark, and 2.3 mi (3.7 km) upstream from mouth.

DRAINAGE AREA.--21.9 mi² (56.7 km²) of which 1.1 mi² (2.8 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,690 ft (515 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,540 ft³/s (43.6 m³/s) Apr. 17, 1979, gage height, 9.95 ft (3.033 m), from rating curve extended above 200 ft³/s (5.66 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 68 ft³/s (1.93 m³/s) July 19, gage height, 3.56 ft (1.085 m), no peak above base of 75 ft³/s (2.12 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	.27	.00	.00	.00	.00	1.4	.03	.00	.07	.06	6.6
2	.80	.24	.00	.00	.00	.00	.90	.03	.00	.06	.06	.79
3	1.5	.19	.00	.00	.00	.00	.80	.02	.00	.06	.07	.28
4	1.5	.18	.00	.00	.00	.00	.80	.00	.48	.05	.28	.14
5	1.5	.16	.01	.00	.00	.00	.80	.00	.14	.04	.28	.14
6	1.5	.13	.04	.00	.00	.00	.80	.00	.14	.04	.19	.12
7	1.4	.11	.09	.00	.00	.00	.90	.00	.28	.04	.16	.12
8	1.4	.11	.02	.00	.00	.00	1.2	.00	.20	.04	.14	.10
9	1.2	.05	.00	.00	.00	.04	1.0	.00	.14	.06	5.3	.08
10	1.1	.02	.00	.00	.00	.11	.80	.00	.10	.06	1.3	.06
11	.96	.02	.00	.00	.00	.10	1.0	.00	.11	.06	.44	.07
12	.63	.02	.00	.00	.00	.01	.44	.00	9.6	.06	.22	.11
13	.46	.01	.00	.00	.00	.06	.34	.00	5.1	.19	.20	.20
14	.33	.02	.01	.00	.00	.50	.34	.00	1.2	.20	.19	.17
15	.26	.03	.00	.00	.00	4.0	.22	.00	.36	.06	.14	.14
16	.43	.03	.02	.00	.00	6.0	.20	.00	.20	.04	7.6	.13
17	1.6	.08	.00	.00	.00	8.0	.20	.00	.11	.04	2.3	.11
18	1.5	.16	.00	.00	.00	10	.18	.00	.08	.07	.80	.10
19	2.0	.15	.00	.00	.00	10	.22	.00	.08	13	.36	.10
20	2.1	.10	.00	.00	.00	8.5	.50	.00	.11	2.8	2.3	.13
21	2.1	.07	.00	.00	.00	8.0	.15	.00	.09	.36	.76	.16
22	2.0	.03	.00	.00	.00	7.5	.08	.00	.11	.20	.39	.19
23	2.0	.03	.00	.00	.00	2.5	.05	.00	.09	.19	.73	.19
24	1.8	.01	.00	.00	.00	1.4	.04	.00	.08	.11	.29	.18
25	1.8	.00	.00	.00	.00	1.5	.02	.00	.08	.10	.14	.17
26	1.6	.00	.00	.00	.00	1.7	.03	.00	.06	.09	.09	.18
27	.85	.00	.00	.00	.00	3.0	.00	.00	.06	.08	.08	.15
28	.64	.00	.00	.00	.00	5.0	.00	.00	.07	.08	.11	.13
29	.44	.00	.00	.00	.00	3.3	.00	.00	.09	.08	.11	.12
30	.34	.00	.00	.00	---	3.5	.02	.00	.09	.08	.18	.12
31	.27	---	.00	.00	---	2.6	---	.00	---	.07	10	---
TOTAL	36.31	2.22	.19	.00	.00	87.32	13.43	.08	19.25	18.48	35.27	11.28
MEAN	1.17	.074	.006	.000	.000	2.82	.45	.003	.64	.60	1.14	.38
MAX	2.1	.27	.09	.00	.00	10	1.4	.03	9.6	13	10	6.6
MIN	.26	.00	.00	.00	.00	.00	.00	.00	.00	.04	.06	.06
AC-FT	72	4.4	.4	.00	.00	173	27	.2	38	37	70	22

CAL YR 1979 TOTAL 1247.51 MEAN 3.42 MAX 407 MIN .00 AC-FT 2470
WTR YR 1980 TOTAL 223.83 MEAN .61 MAX 13 MIN .00 AC-FT 444

06340780 ALDERIN CREEK NEAR FORT CLARK, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
03...	1120	1.6	1980	8.5	20.5	10.0	9.7	91	.50	1100	270	0
NOV												
13...	1200	.01	2550	8.2	.5	.5	11.1	80	49	K34	350	0
MAR												
23...	0940	2.4	337	7.9	1.0	.3	12.2	90	18	9300	74	0
26...	0935	1.6	--	--	.0	.0	--	--	--	--	--	--
APR												
15...	1325	.21	1540	8.3	15.0	5.0	12.1	100	K1	200	200	0
JUL												
10...	0815	.06	2240	8.5	20.5	15.0	7.6	80	400	2200	400	0
AUG												
22...	1115	.43	1220	8.5	20.5	16.0	9.0	98	980	1600	140	0
SEP												
17...	1320	.11	2300	8.5	14.0	13.0	10.2	103	110	180	310	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
03...	47	38	380	74	10	13	721	12	611	3.8	490	6.0
NOV												
13...	69	43	510	86	12	12	703	0	576	7.1	790	6.5
MAR												
23...	16	8.2	38	48	2.1	13	115	0	94	2.3	67	3.7
26...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
15...	37	25	270	74	9.4	8.5	418	0	343	3.2	470	4.7
JUL												
10...	48	68	420	69	11	12	754	17	646	4.0	660	7.3
AUG												
22...	29	17	230	77	8.4	8.7	373	7	318	2.0	310	5.9
SEP												
17...	54	43	450	75	11	8.9	843	31	743	4.6	530	5.0

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
03...	.3	4.9	1390	1350	1.89	6.00	.00	--	.04	.05	1.9	1.9
NOV												
13...	.5	8.9	1820	1790	2.48	.05	.09	.02	.07	.08	.93	1.0
MAR												
23...	.0	6.3	240	210	.33	1.56	.54	--	.22	.27	2.4	2.6
26...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
15...	.3	7.2	1060	1030	1.44	.60	.24	.24	.20	.24	1.2	1.4
JUL												
10...	.8	4.3	1380	1610	1.88	.22	.00	.01	.00	.00	1.2	1.2
AUG												
22...	.3	6.5	790	802	1.07	.92	.80	.79	.00	.00	1.3	1.3
SEP												
17...	.4	7.8	1690	1550	2.30	.50	.00	.00	.00	.00	1.6	1.6

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340780 ALDERIN CREEK NEAR FORT CLARK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)
OCT 03...	1.9	8.4	.110	.34	.020	--	--	--	--	--	--
NOV 13...	1.1	4.8	.060	.18	.040	--	--	--	--	--	--
MAR 23...	3.1	14	.260	.80	.180	60	2	0	--	100	50
26...	--	--	--	--	--	--	--	--	--	--	--
APR 15...	1.6	7.3	.160	.49	.040	10	--	--	9	--	--
JUL 10...	1.2	5.3	.070	.21	.000	10	3	0	11	100	30
AUG 22...	2.1	9.3	.290	.89	.030	--	--	--	--	--	--
SEP 17...	1.6	7.1	.060	.18	.010	--	--	--	--	--	--

DATE	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, SUSPENDED RECOV. (UG/L AS BE) (01011)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)
OCT 03...	--	--	--	--	--	--	400	--	--	--	--
NOV 13...	--	--	--	--	--	--	460	--	--	--	--
MAR 23...	50	--	0	0	<1	--	220	10	10	0	--
26...	--	--	--	--	--	--	--	--	--	--	--
APR 15...	60	50	--	--	<1	1	220	--	--	0	10
JUL 10...	70	3000	10	--	<3	1	420	10	0	10	10
AUG 22...	--	--	--	--	--	--	290	--	--	--	--
SEP 17...	--	--	--	--	--	--	500	--	--	--	--

DATE	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM SUSPENDED RECOVERABLE (UG/L AS LI) (01131)
OCT 03...	--	--	--	--	--	--	--	--	50	--	--
NOV 13...	--	--	--	--	--	--	--	--	50	--	--
MAR 23...	2	0	<3	--	13	3	<10	--	200	10	0
26...	--	--	--	--	--	--	--	--	--	--	--
APR 15...	--	--	<3	10	--	--	<10	31	40	--	--
JUL 10...	1	--	<8	20	5	--	<25	21	<25	90	7
AUG 22...	--	--	--	--	--	--	--	--	290	--	--
SEP 17...	--	--	--	--	--	--	--	--	60	--	--

06340780 ALDERIN CREEK NEAR FORT CLARK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
NOV											
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
23...	13	100	40	56	.1	.2	.0	--	2	0	<10
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
15...	45	--	--	49	--	.2	--	.06	--	--	<10
JUL											
10...	83	20	20	4	.1	.0	.1	.03	4	0	5
AUG											
22...	--	--	--	--	--	--	--	--	--	--	--
SEP											
17...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
NOV											
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
23...	--	10	10	0	--	0	0	0	--	160	<6.0
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
15...	10	--	--	11	30	--	--	2	0	560	<3.0
JUL											
10...	2	7	0	8	30	1	0	1	0	1100	11
AUG											
22...	--	--	--	--	--	--	--	--	--	--	--
SEP											
17...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)
OCT									
03...	--	--	--	--	--	--	--	--	--
NOV									
13...	--	--	--	--	--	--	--	--	--
MAR									
23...	30	20	9	--	<2.2	2.2	12	1.3	12
26...	--	--	--	--	--	--	--	--	--
APR									
15...	--	--	<3	70	--	--	--	--	--
JUL									
10...	10	2	8	48	<25	<.4	12	.6	12
AUG									
22...	--	--	--	--	--	--	--	--	--
SEP									
17...	--	--	--	--	--	--	--	--	--

06340780 ALDERIN CREEK NEAR FORT CLARK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
OCT 03...	--	25	1.6	168	.73	--	--	--
NOV 13...	--	45	.4	95	.00	--	--	--
MAR 23...	1.3	30	3.3	71	.46	--	--	--
26...	--	--	--	996	4.3	97	97	100
APR 15...	--	21	1.1	145	.08	--	--	--
JUL 10...	.6	39	--	35	.01	--	--	--
AUG 22...	--	--	3.4	428	.50	76	98	100
SEP 17...	--	50	2.2	139	.04	--	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
APR 15...	46	50	53	56	57	64	72	81	87	100	--
JUL 10...	71	89	98	100	--	--	--	--	--	--	--
AUG 22...	18	21	22	23	23	29	35	36	36	52	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
AUG 22...	43	.780	.150	--	--
SEP 17...	26	.430	.000	1.26	1.65

06340700 ALDERIN CREEK NEAR FORT CLARK, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	OCT 3,79 1120	NOV 13,79 1200	MAR 25,80 0940	APR 15,80 1325
TOTAL CELLS/ML	140000	13000	700	640
DIVERSITY: DIVISION	0.3	0.9	0.6	0.6
.CLASS	0.3	0.9	0.6	0.6
..ORDER	0.3	1.1	0.8	1.0
...FAMILY	0.7	1.3	0.8	1.0
....GENUS	1.3	1.3	0.8	1.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	*	0	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	1600	1	900	7	16	2	3900	60
....CHODATELLA	--	-	800	6	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-
....NEPHROCYTIUM	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	890	1	--	-	--	-	--	-
....CRUCIGENIA	*	0	--	-	--	-	--	-
....SCENEDESMUS	*	0	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	1500	12	57	8	2600	40
..ZYGNEMATALES								
...DESMIDIACEAE								
....CLOSTERIUM	--	-	--	-	29	4	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	1300	1	--	-	--	-	--	-
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

06340780 ALDERIN CREEK NEAR FORT CLARK, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	JUL 10,80 0815	AUG 22,80 1115	SEP 17,80 1320
TOTAL CELLS/ML	660	13000	69000
DIVERSITY: DIVISION	1.2	0.5	0.5
.CLASS	1.2	0.5	0.5
..ORDER	1.8	0.5	0.6
...FAMILY	2.6	0.6	0.6
....GENUS	2.7	0.6	0.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHLOROCOCCACEAE						
....CHLOROCOCCUM	**	*	**	*	**	*
...OOCYSTACEAE						
....ANKISTRODESMUS	55	8	*	0	2000	3
....CHODATELLA	**	*	**	*	**	*
....DICTYOSPHAERIUM	**	*	**	*	*	0
....KIRCHNERIELLA	**	*	**	*	*	0
....NEPHROCYTIUM	**	*	**	*	*	0
....OOCYSTIS	**	*	**	*	*	0
....SELENASTRUM	26	4	**	*	**	*
....TREUBARIA	**	*	*	0	*	0
...SCENEDESMACEAE						
....ACTINASTRUM	**	*	**	*	1100	2
....CRUCIGENIA	**	*	*	0	600	1
....SCENEDESMUS	26	4	*	0	*	0
....TETRASTRUM	**	*	*	0	660	1
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	96	16	96	1	*	0
..ZYGNEMATALES						
...DESMIDIACEAE						
....CLOSTERIUM	**	*	**	*	**	*
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	**	*	100	1	*	0
..PENNALES						
...CYMBELLACEAE						
....CYMBELLA	**	*	*	0	**	*
...NAVICULACEAE						
....NAVICULA	18	2	110	1	**	*
...NITZSCHIACEAE						
....NITZSCHIA	18	2	870	6	*	0
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
[illegible]						
[illegible]	**	*	**	*	600	1
[illegible]						
[illegible]	**	*	**	*	**	*
CYANOPHYTA (BLUE-GREEN ALGAE)						
[illegible]						
[illegible]						
[illegible]						
[illegible]	[illegible]	8	**	*	**	*
[illegible]						
[illegible]						
[illegible]	[illegible]	[illegible]	**	*	**	*
[illegible]	**	*	**	*	**	*
[illegible]						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	**	*	**	*	**	*
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]	**	*	*	0	*	0
[illegible]	**	*	*	0	*	0
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]	[illegible]	2	**	*	**	*

NOTE: [illegible]

06340890 MISSOURI RIVER TRIBUTARY NO. 2 NEAR HENSLER, ND

LOCATION.--Lat 47°16'31", long 101°11'49", in SW¼NE¼SW¼ sec.21, T.144 N., R.83 W., McLean County, Hydrologic Unit 10130101, on right bank 200 ft (61 m) upstream from culverts on county road, 7.9 mi (12.7 km) west of Washburn, 5.4 mi (8.7 km) northwest of Hensler and 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--9.8 mi² (25.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,670 ft (509 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 455 ft³/s (12.9 m³/s) Apr. 17, 1979, gage height, 9.45 ft (2.880 m); no flow much of the time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9.3 ft³/s (0.26 m³/s) June 13, gage height, 3.06 ft (0.933 m), no peak above base of 30 ft³/s (0.85 m³/s); maximum gage height, 7.42 ft (2.262 m) Mar. 15, ice jam; no flow for most of the time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	1.5	.20	.00	.00	.00	.09
2	.00	.00	.00	.00	.00	.00	[illegible]	.18	.00	.00	.00	.19
3	.00	.00	.00	.00	.00	.00	[illegible]	.12	.00	.00	.00	.05
4	.00	.00	.00	.00	.00	.00	[illegible]	.10	[illegible]	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	[illegible]	.08	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00
7	.00	.00	.00	[illegible]	.00	.00	[illegible]	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	[illegible]	.00	[illegible]	.00	.00	.00
14	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	[illegible]	.00	.00	.00
15	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	[illegible]	.00	.00	.00
16	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	[illegible]	.00	.00	.00
17	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	[illegible]	.00	.00	.00
18	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	[illegible]	.00
22	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	[illegible]	.00
23	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	[illegible]	.00
24	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	[illegible]	.00
25	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	[illegible]	.00
26	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	[illegible]	.00
27	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	[illegible]	.00
28	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	[illegible]	.00
29	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	[illegible]	.00	[illegible]	.00
30	.00	.00	.00	.00	---	[illegible]	[illegible]	.00	.00	.00	[illegible]	.00
31	.00	---	.00	.00	---	[illegible]	---	.00	---	.00	[illegible]	---
TOTAL	.00	.00	.00	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	.00	[illegible]	[illegible]
MEAN	.000	.000	.000	.000	.000	[illegible]	[illegible]	[illegible]	[illegible]	.000	[illegible]	[illegible]
MAX	.00	.00	.00	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	.00	[illegible]	[illegible]
MIN	.00	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	[illegible]	[illegible]	[illegible]	[illegible]	.00	[illegible]	[illegible]

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN .00 AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN .00 AC-FT [illegible]

06340890 MISSOURI RIVER TRIBUTARY NO. 2 NEAR HENSLER, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
MAR												
05...	1510	1.0	352	--	1.0	.0	13.0	95	290	K10000	67	--
06...	1200	6.0	--	--	0.0	.5	--	--	--	--	--	--
APR												
16...	1100	.31	1580	8.3	19.0	10.0	10.6	99	90	110	330	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
MAR												
05...	20	4.0	30	45	1.0	12	--	--	--	--	43	8.9
06...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
16...	66	4	290	61	6.7	8.6	584	0	479	9.6	480	9.1

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR												
[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	--	--	--	--	--	--	--	--	--	--	--	--
APR												
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	--	--	--	--	--	--	--	--	--	--	--
APR											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340890 MISSOURI RIVER TRIBUTARY NO. 2 NEAR HENSLER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, SUS- PENDED RECOV. (UG/L AS BE) (01011)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BERYL- LIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01013)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, SUS- PENDED RECOV. (UG/L AS CR) (01031)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)
MAR											
20...	50	100	0	0	<1	1	110	0	0	0	10
22...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	90	--	--	--	<1	--	200	--	--	0	--

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, SUS- PENDED RECOV- ERABLE (UG/L AS CO) (01036)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU) (01041)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM SUS- PENDED RECOV- ERABLE (UG/L AS LI) (01131)
MAR											
20...	1	0	<3	0	11	1	<10	21	230	10	0
22...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	--	--	<3	--	--	--	<10	--	31	--	--

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR											
20...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	[illegible]	--	--	[illegible]	--	[illegible]	--	--	--	--	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	--	--	--	--	--	--	--	--	--	--	--
[illegible]											
[illegible]	--	--	--	[illegible]	--	--	--	[illegible]	--	[illegible]	[illegible]

06340890 MISSOURI RIVER TRIBUTARY NO. 2 NEAR HENSLER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR							
20...	2.0	10	2.0	24	2.0	60	.94
22...	--	--	--	--	--	42	.23
APR							
16...	--	--	--	20	.8	70	.06

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
MAR							
20...	50	20	6	60	<3.1	3.1	10
22...	--	--	--	--	--	--	--
APR							
16...	--	--	<3	--	--	--	--

DATE	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)
MAR			
20...	96	97	100

06340890 MISSOURI RIVER TRIBUTARY NO. 2 NEAR HENSLER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO APRIL 1980

DATE	MAR 20,80		APR 16,80	
TIME	1510		1140	
TOTAL CELLS/ML	1000		3700	
DIVERSITY: DIVISION	0.3		1.0	
.CLASS	0.3		1.0	
..ORDER	0.3		2.1	
...FAMILY	0.9		2.2	
....GENUS	0.9		2.3	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)				
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...OOCYSTACEAE				
....ANKISTRODESMUS	55	2	60	2
..VOLVOCALES				
...CHLAMYDOMONADACEAE				
....CHLAMYDOMONAS	10	1	10000	30
CHRYSOPHYTA				
.BACILLARIOPHYCEAE				
..CENTRALES				
...COSCINODISCACEAE				
....CYCLOTELLA	--	-	91	2
....STEPHANODISCUS	--	-	110	3
..PENNALES				
...EUNOTIACEAE				
....EUNOTIA	10	1	--	-
...GOMPHONEMATACEAE				
....GOMPHONEMA	--	-	25	1
...MERIDIONACEAE				
....MERIDION	--	-	25	1
...NAVICULACEAE				
....NAVICULA	[illegible]	[illegible]	--	-
...NITZSCHIACEAE				
....NITZSCHIA	[illegible]	[illegible]	232	[illegible]
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]	--	-	[illegible]	1
[illegible]				
[illegible]	--	-	[illegible]	1
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]	--	-	[illegible]	1
[illegible]				
[illegible]				
[illegible]	[illegible]	[illegible]	--	-
[illegible]				
[illegible]	[illegible]	[illegible]	--	-
[illegible]				
[illegible]	--	-	[illegible]	[illegible]
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]	--	-	[illegible]	1
[illegible]	--	-	[illegible]	1
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]	--	-	[illegible]	[illegible]
[illegible]				
[illegible]				
[illegible]	--	-	[illegible]	[illegible]

[illegible]

06340900 MISSOURI RIVER NEAR HENSLER, ND

LOCATION.--Lat 47°16'45", long 101°11'03", in SW¼ sec.22, T.144 N., R.83 W., McLean County, Hydrologic Unit 10130101, on left bank about 7.5 mi (12.1 km) west of Washburn, and at mile 1,362 (2,191 km).

DRAINAGE AREA.--183,000 mi² (474,000 km²), approximately.

PERIOD OF RECORD.--May 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,640.00 ft (499.872 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 40 ft (12.192 m) lower.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 27.77 ft (8.464 m) Mar. 20, 1965; minimum daily recorded, 15.18 ft (4.627 m) Nov. 23, 1979.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	16.11	16.50	16.19		---	17.81	16.91	17.15	18.16	18.43	18.14
2	---	15.43	16.39	---		---	17.45	16.98	17.37	18.12	18.68	18.13
3	---	15.43	16.15	15.49		---	17.71	17.02	17.52	18.21	18.14	17.97
4	---	15.60	16.53	16.94		---	17.05	17.13	17.69	18.21	18.14	18.10
5	16.83	15.58	16.77	16.16		---	17.38	16.88	17.63	18.07	18.00	17.79
6	16.69	15.23	16.42	---		---	17.32	16.89	17.41	18.19	18.35	17.90
7	16.60	15.49	16.57	---		---	17.72	17.10	17.67	18.33	18.51	17.72
8	16.85	15.57	16.86	---		---	17.66	17.28	17.79	18.81	18.41	17.83
9	16.59	15.29	16.60	---		---	17.47	17.10	17.40	19.18	18.68	17.72
10	16.59	15.32	17.10	---		---	17.59	16.99	17.50	19.29	18.06	17.64
11	16.47	15.39	---	---		---	17.53	16.46	17.31	19.19	17.96	17.89
12	16.32	15.79	---	---		---	17.56	17.41	17.70	19.47	17.73	17.76
13	15.78	15.82	---	---		---	17.89	16.89	17.67	19.18	18.04	17.68
14	16.53	15.80	---	---		---	17.51	16.66	17.30	19.19	18.11	17.56
15	16.52	15.79	---	---		---	17.67	16.94	17.14	19.17	18.71	17.79
16	16.38	15.76	---	---		---	17.63	16.96	18.09	18.99	18.21	17.82
17	16.16	15.85	---	---		---	17.57	16.86	17.45	19.37	17.94	17.59
18	16.01	15.72	---	---		---	17.64	16.87	17.31	19.06	18.19	17.77
19	16.30	16.10	16.60	---		---	17.57	17.00	17.61	19.41	18.36	17.79
20	16.05	15.39	16.58	---		---	17.89	16.99	17.69	18.78	18.19	17.88
21	16.00	15.30	16.86	---		---	17.26	17.05	17.48	19.56	18.05	17.83
22	16.03	15.42	17.76	---		---	17.79	17.06	17.71	18.79	---	17.65
23	15.98	15.18	17.56	---		---	17.37	16.97	17.61	18.91	---	17.13
24	16.25	16.00	17.65	---		---	17.35	17.11	18.02	18.59	---	17.68
25	16.21	16.19	18.71	---		17.12	17.35	17.27	18.00	18.86	---	17.72
26	16.50	16.39	18.52	---		17.37	17.56	17.89	17.95	18.17	18.23	18.03
27	16.30	16.09	18.64	---		17.31	17.59	17.19	18.16	18.50	18.11	17.67
28	15.88	16.66	18.31	---		17.47	17.85	17.20	18.21	18.19	18.17	17.81
29	16.16	16.38	18.56	---		17.53	17.91	17.48	18.11	18.15	18.18	18.23
30	16.20	16.11	18.36	---		17.82	17.91	17.37	18.22	18.17	18.16	17.79
31	16.17	---	18.52	---		17.87	---	17.28	---	18.05	18.42	---
TOTAL	---	472.31	---	---		---	526.83	528.71	529.64	579.64	---	534.21
MEAN	---	15.74	---	---		---	17.56	17.06	17.65	18.70	---	17.81
MAX	---	16.66	---	---		---	17.91	17.89	18.22	19.56	---	18.23
MIN	---	15.18	---	---		---	17.05	16.46	17.14	18.05	---	17.13

06340905 COAL LAKE COULEE NEAR HENSLER, ND

LOCATION.--Lat 47°18'09", long 101°07'52", in SW¼SE¼SE¼ sec.12, T.144 N., R.83 W., McLean County, Hydrologic Unit 10130101, on right bank 100 ft (30 m) upstream from bridge, on county road 4.5 mi (7.2 km) west of Washburn, 3.6 mi (5.8 km) northwest of Hensler, and 0.3 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--7.5 mi² (19.5 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,690 ft (515 m), from topographic map.

REMARKS.--Records good except those for March, April and August, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 926 ft³/s (26.2 m³/s) Aug. 20, 1980, gage height, 8.61 ft (2.624 m) from rating extended above 600 ft³/s (17.0 m³/s) on basis of a culvert computation of peak flow; no flow for many months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 926 ft³/s (26.2 m³/s) Aug. 20, gage height, 8.61 ft (2.624 m) from rating curve extended above 600 ft³/s (17.0 m³/s) on basis of culvert computation of peak flow, only peak above base of 40 ft³/s (1.13 m³/s); no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.36
2	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.36
3	.00	.00	.00	.00	.00	.00	.27	.00	.00	.00	.00	.28
4	.00	.00	.00	.00	.00	.00	.23	.00	.00	.00	.00	[illegible]
5	.00	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	[illegible]
6	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	[illegible]	.01	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	[illegible]	.00	.00
17	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	[illegible]	.00
21	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	[illegible]	.00
22	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	[illegible]	.00
23	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	[illegible]	.00
24	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	[illegible]	.00
25	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	[illegible]	.00
26	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	[illegible]	.00
27	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	[illegible]	.00
28	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	[illegible]	.00
29	.00	.00	.00	.00	.00	[illegible]	.00	.00	.00	.00	[illegible]	.00
30	.00	.00	.00	.00	---	[illegible]	.00	.00	.00	.00	[illegible]	.00
31	.00	---	.00	.00	---	[illegible]	---	.00	---	.00	[illegible]	---
TOTAL	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	[illegible]	[illegible]	[illegible]
MEAN	.000	.000	.000	.000	.000	[illegible]	[illegible]	.000	.000	[illegible]	[illegible]	[illegible]
MAX	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	[illegible]	[illegible]	[illegible]
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	[illegible]	[illegible]	.00	.00	[illegible]	[illegible]	[illegible]

CAL YR 1979 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN .00 AC-FT [illegible]
WTR YR 1980 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN .00 AC-FT [illegible]

06340905 COAL LAKE COULEE NEAR HENSLER, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
MAR												
22...	0915	.29	356	8.0	4.0	.5	12.6	94	90	K12000	81	1
25...	1030	.61	--	--	2.5	.0	--	--	--	--	--	--
AUG												
26...	0915	.06	564	8.2	11.0	15.0	7.0	72	200	270	130	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
MAR												
22...	18	8.7	66	60	2.1	17	98	0	82	1.6	96	2.2
25...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
26...	32	12	71	52	2.6	9.7	207	0	170	2.1	120	2.6

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR												
22...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]
25...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
26...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR											
22...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
26...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

K - [illegible]

0630905 COAL LAKE COULEE NEAR HENSLER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
MAR											
22...	50	60	0	0	<1	0	120	10	0	10	3
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
26...	80	--	0	--	<1	--	210	10	10	0	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBLT, DI-SOLED (U/L ASCO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
MAR											
22...	3	1	<3	40	9	0	11	4	260	10	0
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
26...	1	--	<3	--	7	--	<10	--	170	20	5

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
MAR											
22...	10	140	90	55	.9	.1	.9	.01	1	0	<10
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
26...	15	100	93	7	.5	.1	.4	--	3	--	<10

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR											
22...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
26...	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR							
22...		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25...		--	--	--	--	--	--
AUG							
26...		--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

06340905 COAL LAKE COULEE NEAR HENSLER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (00050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (00060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR							
22...	1.4	11	1.4	20	2.9	55	.04
25...	--	--	--	--	--	21	.03
AUG							
26...	2.5	12	2.6	15	2.9	67	.01

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAR										
22...	0	0	0	2	5	11	22	41	62	100

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

DATE	MAR 22,80		AUG 26,80	
TIME	[illegible]		[illegible]	
TOTAL CELLS/ML	[illegible]		[illegible]	
DIVERSITY: DIVISION	[illegible]		[illegible]	
.CLASS	[illegible]		[illegible]	
..ORDER	[illegible]		[illegible]	
...FAMILY	[illegible]		[illegible]	
....GENUS	[illegible]		[illegible]	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]				
[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]				
[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]				
[illegible]				
[illegible]				
[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

06340930 BUFFALO CREEK NEAR WASHBURN, ND

LOCATION.--Lat 47°18'12", long 101°05'20", in SE¼SE¼SE¼ sec.8, T.144 N., R.82 W., McLean County, Hydrologic Unit 10130101, on right bank 70 ft (21 m) upstream from culvert, on county road 1.2 mi (1.9 km) above mouth, and 2.7 mi (4.3 km) west of Washburn.

DRAINAGE AREA.--57.3 mi² (148 km²) of which 30.0 mi² (77.7 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,660 ft (506 m) from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,800 ft³/s (108 m³/s) Apr. 19, 1979, caused by the release of water that was impounded behind two road embankments upstream when the embankments washed out, by computation of peak flow through culvert and over road, gage height, 17.0 ft (5.18 m) from floodmark; no flow for several months each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft³/s (0.57 m³/s) and maxima (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 19	—	50	1.42	Backwater from ice		Aug. 25	0845	21	0.59	5.42	1.652
Aug. 20	0915	*144	4.08	7.08	2.158						

No flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

BUFFALO CREEK BASIN

[illegible] BUFFALO CREEK NEAR [illegible], ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years [illegible] to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NOV												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DEC												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	--	--	[illegible]	[illegible]	--	--	--	--	--	--
APR												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	--	--	[illegible]	[illegible]	--	--	--	--	--	--
JUN												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]
JUL												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NOV												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DEC												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP												
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06340930 BUFFALO CREEK NEAR WASHBURN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
03...	.5	9.5	1760	1680	2.39	.86	.00	--	.02	.02	.87	.89
NOV												
13...	.5	10	1820	1880	2.48	.49	.09	.05	.07	.08	.64	.71
DEC												
04...	.5	24	1910	1920	2.60	.77	.12	.08	.41	.50	.79	1.2
MAR												
22...	.0	8.3	249	225	.34	8.74	1.2	--	.06	.07	2.3	2.4
25...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
16...	.3	13	1200	1200	1.63	1.68	.03	.07	.17	.21	1.2	1.4
MAY												
06...	.4	9.7	1760	1990	2.39	.62	.01	.02	.01	.01	.93	.94
28...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
04...	.7	5.2	1670	1610	2.27	.27	.04	.04	.13	.16	2.2	2.3
JUL												
08...	.8	3.2	1850	1790	2.52	.25	.02	.00	.00	.00	1.7	1.7
AUG												
26...	.2	15	934	777	1.27	.53	.02	.03	.24	.29	2.2	2.4
SEP												
17...	.4	5.5	1600	1550	2.18	.52	.00	.00	.01	.01	.99	1.0

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT											
03...	.89	3.9	.050	.15	.020	--	--	--	--	--	--
NOV											
13...	.80	3.5	.050	.15	.020	--	--	--	--	--	--
DEC											
04...	1.3	5.8	.060	.18	.020	--	--	--	--	--	--
MAR											
22...	3.6	16	.510	1.6	.410	120	3	1	--	0	0
25...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	1.4	6.3	.100	.31	.050	0	--	--	5	--	--
MAY											
06...	.95	4.2	.040	.12	.030	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	2.3	10	--	--	.050	170	8	2	5	100	90
JUL											
08...	1.7	7.6	.090	.28	.020	--	--	--	--	--	--
AUG											
26...	2.4	11	.170	.52	.070	--	--	--	--	--	--
SEP											
17...	1.0	4.4	.040	.12	.020	--	--	--	--	--	--

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT											
03...	--	--	--	--	--	--	710	--	--	--	--
NOV											
13...	--	--	--	--	--	--	670	--	--	--	--
DEC											
04...	--	--	--	--	--	--	700	--	--	--	--
MAR											
22...	50	--	0	0	<1	--	120	0	0	0	--
25...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	60	30	--	--	<1	1	430	--	--	0	10
MAY											
06...	--	--	--	--	--	--	730	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	10	80	0	--	<1	1	840	0	0	0	7
JUL											
08...	--	--	--	--	--	--	940	--	--	--	--
AUG											
26...	--	--	--	--	--	--	380	--	--	--	--
SEP											
17...	--	--	--	--	--	--	610	--	--	--	--

06340930 BUFFALO CREEK NEAR WASHBURN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT											
03...	--	--	--	--	--	--	--	--	40	--	--
NOV											
13...	--	--	--	--	--	--	--	--	60	--	--
DEC											
04...	--	--	--	--	--	--	--	--	70	--	--
MAR											
22...	3	0	<3	--	8	0	<10	--	210	10	0
25...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	--	--	<3	10	--	--	<10	16	23	--	--
MAY											
06...	--	--	--	--	--	--	--	--	80	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	3	--	<3	10	12	--	<10	19	260	100	60
JUL											
08...	--	--	--	--	--	--	--	--	160	--	--
AUG											
26...	--	--	--	--	--	--	--	--	100	--	--
SEP											
17...	--	--	--	--	--	--	--	--	80	--	--

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
MAR											
22...	14	180	60	120	.1	.2	.0	--	2	0	<10
25...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	76	--	--	100	--	.2	--	.07	--	--	<10
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	36	210	200	8	.3	.2	.1	.04	0	--	<10
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
26...	--	--	--	--	--	--	--	--	--	--	--
SEP											
17...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
OCT											
03...	--	--	--	--	--	--	--	--	--	--	--
NOV											
13...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
MAR											
22...	--	8	5	3	--	0	0	0	--	110	<6.0
25...	--	--	--	--	--	--	--	--	--	--	--
APR											
16...	4	--	--	6	20	--	--	0	0	500	<3.0
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	3	18	8	10	20	1	0	1	0	140	3.0
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
AUG											
26...	--	--	--	--	--	--	--	--	--	--	--
SEP											
17...	--	--	--	--	--	--	--	--	--	--	--

06340930 BUFFALO CREEK NEAR WASHBURN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
MAR							
22...	30	20	6	--	<3.6	2.7	18
25...	--	--	--	--	--	--	--
APR							
16...	--	--	<3	50	--	--	--
MAY							
06...	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--
JUN							
04...	30	30	4	35	<22	<4.5	<12

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT							
03...	--	--	--	16	.7	143	.07
NOV							
13...	--	--	--	13	.3	77	.02
DEC							
04...	--	--	--	31	.4	224	.09
MAR							
22...	1.8	18	1.8	31	3.4	79	2.8
25...	--	--	--	--	--	32	.21
APR							
16...	--	--	--	19	.9	54	.08
MAY							
06...	--	--	--	17	.4	18	.01
28...	--	--	--	--	--	21	.01
JUN							
04...	6.0	<11	5.6	65	1.2	181	.03
JUL							
08...	--	--	--	36	.9	5	.00
AUG							
26...	--	--	--	22	1.8	83	.05
SEP							
17...	--	--	--	20	.7	31	.01

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
APR										
16...	50	68	84	95	100	--	--	--	--	--
JUN										
04...	35	50	70	76	79	85	92	95	97	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
AUG					
26...	49	3.51	1.13	--	--
SEP					
17...	22	6.15	2.88	1.81	3.23

06340930 BUFFALO CREEK NEAR WASHBURN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 5,79		NOV 13,79		DEC 4,79		MAR 22,80		APR 16,80		MAY 6,80	
TIME	1630		0850		1130		1355		1800		0930	
TOTAL CELLS/ML	720		2200		1800		480		350		72	
DIVERSITY: DIVISION	1.2		1.6		1.1		0.7		1.4		0.7	
.CLASS	1.2		1.6		1.1		0.7		1.4		0.7	
..ORDER	1.6		1.7		1.3		0.8		2.2		0.7	
...FAMILY	2.8		2.2		1.3		0.8		2.5		0.7	
....GENUS	2.8		2.4		2.0		0.8		2.5		0.7	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	71	10	14	1	14	1	14	3	64#	19	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	110#	15	300	14	--	-	--	-	--	-	58#	80
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	57	6	43	9	140#	41	--	-
..ZYGNEMATALES												
...DESMIDIACEAE												
....CLOSTERIUM	--	-	--	-	57	6	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	81	11	96	4	--	-	--	-	26	7	--	-
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-	--	-
....COCCONEIS	160#	23	27	1	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....AMPHORA	--	-	--	-	--	-	--	-	--	-	--	-
....CYMBELLA	5	1	--	-	--	-	--	-	--	-	--	-
....RHOPALODIA	--	-	14	1	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	14	1	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	5	1	14	1	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....DIPLONEIS	--	-	69	3	--	-	--	-	--	-	--	-
....ENTOMONEIS	--	-	27	1	--	-	--	-	--	-	--	-
....NAVICULA	170#	24	330	15	--	-	--	-	51	15	--	-
...NITZSCHIACEAE												
....NITZSCHIA	56	8	110	5	14	1	--	-	13	4	14#	20
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	13	4	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	57	6	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	500#	49	--	-	--	-	--	-
....OSCILLATORIA	--	-	1100#	51	--	-	400#	85	--	-	--	-
....PHORMIDIUM	--	-	--	-	290#	28	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	51	7	14	1	29	3	--	-	13	4	--	-
....LEPOCINCLIS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	5	1	41	2	--	-	--	-	13	4	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	14	3	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	13	4	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06340930 BUFFALO CREEK NEAR WASHBURN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAY 16,80	JUN 4,80	JUL 8,80	AUG 26,80	SEP 17,80
TIME	0930	1445	0835	1245	0905
TOTAL CELLS/ML	72	9600	370	4100	100
DIVERSITY: DIVISION	0.7	1.3	1.2	1.1	2.3
.CLASS	0.7	1.3	1.2	1.1	2.3
..ORDER	0.7	1.7	1.7	1.2	2.3
...FAMILY	0.7	2.0	2.0	1.3	2.3
....GENUS	0.7	2.0	2.0	1.5	2.3

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	52	14	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	340	4	13	3	55	1	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	27	1	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	*	0	--	-
....OOCYSTIS	--	-	--	-	--	-	*	0	--	-
...SCENEDESMACEAE										
....SCENEDESMUS	58#	80	550	6	--	-	55	1	--	-
....TETRASTRUM	--	-	--	-	--	-	110	3	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	--	-	--	-	96	2	26#	25
..ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	550	6	--	-	41	1	--	-
....MELOSIRA	--	-	--	-	--	-	27	1	--	-
..PENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	69	1	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	26	7	--	-	--	-
...CYMBELLACEAE										
....AMPHORA	--	-	69	1	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-	--	-	--	-
....RHOPALODIA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....SYNEDRA	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....DIPLONEIS	--	-	--	-	--	-	27	1	--	-
....ENTOMONEIS	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	270	3	--	-	41	1	13	13
...NITZSCHIACEAE										
....NITZSCHIA	14#	20	1500#	16	26	7	27	1	--	-
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...CHROMULINACEAE										
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	69	1	--	-	--	-	13	13
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	340	4	52	14	--	-	26#	25
..HORMOGONALES										
...OSCILLATORIACEAE										
....LYNGBYA	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	5700#	60	210#	55	3200#	78	--	-
....PHORMIDIUM	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	--	-	180	4	26#	25
....LEPOCINCLIS	--	-	--	-	--	-	41	1	--	-
....TRACHELOMONAS	--	-	69	1	--	-	120	3	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06341000 MISSOURI RIVER AT WASHBURN, ND

LOCATION.--Lat 47°17'20", long 101°02'15", in SE¼SW¼ sec.14, T.144 N., R.82 W.,McLean County, Hydrologic Unit 10130101, on left bank near municipal water plant in Washburn, and at mile 1,355 (2,180 km).

DRAINAGE AREA.--184,000 mi² (476,600 km²), approximately.

PERIOD OF RECORD.--August 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,640.00 ft (499.872 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1964, at datum 40 ft (12.192 m) lower.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 22.76 ft (6.937 m) Jan. 11, 1964; minimum daily recorded, 9.73 ft (2.966 m) May 7, 1978.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.77	10.90	11.15	12.81	17.96	---	12.73	11.82	12.09	13.10	13.46	13.36
2	11.55	10.91	11.19	12.94	16.03	18.33	12.30	11.90	12.23	13.08	13.73	13.28
3	11.52	10.83	10.86	13.04	17.94	16.99	12.57	11.93	12.39	13.14	13.28	13.22
4	11.63	10.92	11.27	12.77	18.00	16.07	12.17	11.99	12.54	13.18	13.32	13.28
5	11.49	10.95	11.47	12.15	16.04	17.25	12.36	11.85	12.59	13.01	13.09	13.01
6	11.37	11.00	11.18	11.95	18.04	17.43	12.19	11.80	12.34	13.15	13.44	13.09
7	11.19	10.96	11.55	---	18.01	16.05	12.57	11.99	12.54	13.21	13.57	12.94
8	11.47	11.05	12.06	---	17.71	15.33	12.31	12.18	12.67	13.70	13.51	13.01
9	11.24	10.96	11.43	---	17.97	15.00	12.33	12.01	12.37	14.06	13.76	12.93
10	11.29	10.94	11.77	17.21	17.13	14.80	12.46	11.90	12.44	14.18	13.25	12.86
11	11.12	10.87	12.43	---	17.10	14.81	12.40	11.49	12.26	14.13	13.10	13.03
12	11.08	10.95	13.05	---	17.20	14.94	12.37	12.28	12.62	14.33	12.90	12.93
13	11.12	10.94	13.42	17.32	17.33	14.61	12.35	11.84	12.44	14.15	13.16	12.88
14	11.18	10.98	13.56	17.64	17.40	14.37	12.36	11.54	12.25	14.12	13.26	12.77
15	11.20	10.66	12.93	17.56	17.10	14.51	12.53	11.88	12.23	14.12	13.15	12.96
16	11.08	10.94	13.47	17.69	18.65	14.04	12.27	11.90	12.80	13.97	13.34	13.00
17	11.18	11.02	13.58	17.75	17.18	14.21	12.43	11.82	12.45	14.28	13.11	12.80
18	11.10	11.00	11.58	17.91	17.27	14.22	12.50	11.82	12.30	14.03	13.28	12.93
19	11.19	11.14	11.60	18.02	17.23	14.17	12.46	11.96	12.33	14.34	13.55	12.93
20	11.18	11.03	11.88	18.21	17.32	14.13	12.98	11.93	12.61	13.79	13.38	13.17
21	11.09	11.08	11.71	18.35	17.08	15.91	12.12	11.99	12.47	14.44	13.25	13.00
22	11.25	11.39	12.13	18.26	16.88	15.48	12.60	12.01	12.60	13.65	13.43	12.85
23	11.22	10.91	12.10	18.36	16.74	15.09	12.32	12.00	12.55	13.95	13.21	12.57
24	11.09	11.21	12.20	18.47	16.30	15.14	12.20	12.04	12.92	13.64	13.34	12.64
25	10.99	10.87	12.33	18.04	15.98	12.27	12.19	12.18	12.90	13.56	13.35	12.84
26	10.79	11.10	12.33	---	16.12	12.43	12.45	12.44	12.84	13.25	13.38	13.11
27	11.03	10.91	12.26	---	15.59	12.40	12.41	12.10	13.09	13.51	13.26	12.85
28	10.76	11.14	12.70	---	---	12.74	12.36	12.17	13.12	13.52	13.31	12.97
29	10.88	11.25	12.61	---	---	12.81	12.27	12.33	13.04	13.24	13.27	13.35
30	10.95	10.90	12.76	---	---	12.81	11.92	12.27	13.16	13.25	13.30	12.89
31	10.89	---	12.79	---	---	12.81	---	12.27	---	13.20	13.54	---
TOTAL	346.89	329.71	377.35	---	---	---	371.48	371.63	377.22	424.28	413.28	389.45
MEAN	11.19	10.99	12.17	---	---	---	12.38	11.99	12.57	13.69	13.33	12.98
MAX	11.77	11.39	13.58	---	---	---	12.98	12.44	13.16	14.44	13.76	13.36
MIN	10.76	10.66	10.86	---	---	---	11.92	11.49	12.09	13.01	12.90	12.57

06341800 PAINTED WOODS CREEK NEAR WILTON, ND

LOCATION.--Lat 47°16'30", long 100°47'30", in SW¼SW¼ sec.23, T.144 N., R.80 W., McLean County, Hydrologic Unit 10130101, on right bank 600 ft (180 m) upstream from county highway bridge, 7 mi (11 km) upstream from Yanktonai Creek, and 8 mi (13 km) north of Wilton.

DRAINAGE AREA.--427 mi² (1,110 km²), approximately, of which about 310 mi² (800 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,760 ft (536 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--23 years, 8.22 ft³/s (0.233 m³/s), 5,960 acre-ft/yr (7.35 hm³/yr); median of yearly mean discharges, 7.4 ft³/s (0.21 m³/s), 5,360 acre-ft/yr (6.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,050 ft³/s (115 m³/s) Apr. 19, 1979, gage height, 9.64 ft (2.938 m); no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft³/s (0.85 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 6	0645	*152	4.30	5.66	1.725	June 12	0800	53	1.50	5.02	1.530

Minimum daily discharge, 0.01 ft³/s (<0.001 m³/s) on several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.01	.10	.09	.09	.08	10	.57	.03	1.0	.25	3.2
2	.01	.02	.09	.08	.09	.08	10	.48	.03	.86	.23	2.7
3	.01	.03	.09	.07	.08	.08	10	.43	.06	.68	.31	2.4
4	.01	.02	.09	.08	.08	.08	9.0	.43	21	.55	4.2	2.1
5	.01	.04	.09	.08	.08	.08	8.0	.38	83	.52	1.9	1.8
6	.01	.05	.09	.09	.09	.08	7.0	.34	123	.43	1.5	1.7
7	.01	.06	.11	.08	.08	.08	6.0	.30	63	.57	1.0	1.4
8	.01	.05	.10	.08	.08	.08	5.1	.33	58	.55	.72	1.1
9	.01	.06	.10	.08	.08	.08	4.8	.35	38	.51	.70	1.1
10	.01	.07	.10	.08	.08	.08	3.7	.31	26	.47	.76	.94
11	.01	.07	.10	.08	.08	.08	3.0	.27	18	.39	.74	.86
12	.01	.06	.11	.08	.08	.08	2.7	.21	34	.34	.64	.86
13	.01	.06	.10	.08	.07	.08	2.4	.21	32	.32	.55	.86
14	.01	.06	.10	.09	.08	.10	2.0	.24	35	.28	.47	.79
15	.01	.07	.11	.09	.08	.50	1.8	.21	24	.27	.43	.67
16	.01	.07	.09	.09	.08	1.0	1.6	.19	17	.29	.52	.62
17	.01	.07	.10	.09	.09	1.2	1.6	.15	14	.27	.66	.62
18	.01	.07	.10	.09	.09	1.6	1.4	.15	12	.26	5.9	.62
19	.02	.07	.11	.09	.08	3.7	1.3	.16	9.8	1.1	3.1	.67
20	.03	.08	.11	.09	.09	2.7	1.2	.13	8.2	1.6	6.3	.67
21	.03	.08	.11	.09	.09	2.0	1.2	.13	6.4	1.1	11	.62
22	.02	.08	.10	.09	.10	12	1.1	.09	5.5	1.2	8.0	.67
23	.02	.08	.10	.09	.10	12	1.0	.08	4.4	.81	5.5	.67
24	.03	.08	.10	.09	.10	7.5	.98	.06	3.0	.60	4.1	.67
25	.03	.08	.10	.09	.09	6.8	.91	.04	2.5	.50	2.0	.67
26	.03	.09	.10	.10	.09	7.2	.83	.03	2.0	.45	2.1	.62
27	.02	.09	.10	.10	.09	6.8	.72	.01	2.0	.39	2.6	.67
28	.03	.09	.09	.10	.09	7.5	.70	.04	1.8	.35	4.4	.62
29	.03	.08	.09	.10	.09	7.2	.70	.04	1.3	.33	3.9	.62
30	.03	.08	.09	.10	---	10	.62	.04	1.1	.29	3.2	.57
31	.02	---	.09	.10	---	10	---	.05	---	.26	2.9	---
TOTAL	.52	1.92	3.06	2.73	2.49	100.84	101.36	6.45	646.12	17.54	80.58	32.08
MEAN	.017	.064	.099	.088	.086	3.25	3.38	.21	21.5	.57	2.60	1.07
MAX	.03	.09	.11	.10	.10	12	10	.57	123	1.6	11	3.2
MIN	.01	.01	.09	.07	.07	.08	.62	.01	.03	.26	.23	.57
AC-FT	1.0	3.8	6.1	5.4	4.9	200	201	13	1280	35	160	64

CAL YR 1979 TOTAL 9881.22 MEAN 27.1 MAX 3060 MIN .01 AC-FT 19600
WTR YR 1980 TOTAL 995.69 MEAN 2.72 MAX 123 MIN .01 AC-FT 1970

06342020 MISSOURI RIVER AT PRICE, ND

LOCATION.--Lat 47°04'47", long 100°55'55", in NW¼ sec.34, T.142 N., R.81 W., Oliver County, Hydrologic Unit 10130101, on right bank 0.5 mi (0.8 km) south of Price, and at mile 1,338 (2,153 km).

DRAINAGE AREA.--185,000 mi² (479,200 km²), approximately.

PERIOD OF RECORD.--November 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,620.00 ft (493.776 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 30, 1964, at datum 20 ft (6.096 m) lower.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 30.12 ft (9.181 m) Jan. 22, 1967; minimum daily recorded, 17.76 ft (5.413 m) Mar. 31, 1968.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	---	19.97	21.01	21.23	21.30
2							---	---	19.99	21.04	21.52	21.21
3							---	---	20.21	21.25	21.27	21.27
4							---	---	20.45	21.46	21.22	21.26
5							---	---	20.59	21.39	21.05	21.11
6							---	---	20.33	21.46	21.30	21.19
7							---	---	20.37	21.39	21.40	21.08
8							---	---	20.48	21.98	21.45	21.15
9							---	---	20.37	22.17	21.58	21.03
10							---	---	20.28	22.24	21.36	21.10
11							---	---	20.15	22.06	21.06	21.01
12							---	---	20.40	22.15	20.91	20.98
13							---	19.79	20.36	22.19	21.01	21.03
14							---	19.45	20.20	22.01	21.15	20.90
15							---	19.65	20.27	22.07	21.04	20.97
16							---	19.72	20.28	21.95	21.21	21.06
17							---	19.66	20.52	22.08	21.15	20.96
18							---	19.64	20.19	22.04	21.09	20.94
19							---	19.71	20.15	22.19	21.45	21.13
20							---	19.72	20.37	22.02	21.37	21.38
21							---	19.79	20.40	22.06	21.30	---
22							---	19.82	20.36	22.03	21.23	---
23							---	19.82	20.46	21.89	21.17	---
24							19.86	19.82	20.65	21.62	21.21	---
25							19.84	19.91	20.74	21.56	---	21.24
26							20.30	20.20	20.77	21.24	---	21.42
27							20.28	19.97	20.87	21.35	---	21.32
28							20.28	20.06	20.94	21.35	---	21.36
29							20.28	20.08	20.94	21.17	21.20	21.31
30							19.48	20.15	20.99	21.17	21.17	21.09
31							---	20.19	---	21.16	21.39	---
TOTAL	---	---	---	---	---	---	---	---	613.05	672.75	---	---
MEAN	---	---	---	---	---	---	---	---	20.44	21.70	---	---
MAX	---	---	---	---	---	---	---	---	20.99	22.24	---	---
MIN	---	---	---	---	---	---	---	---	19.97	21.01	---	---

06342040 SQUARE BUTTE CREEK NEAR HANNOVER, ND

LOCATION.--Lat 47°08'06", long 101°25'31", in NW¼SW¼NW¼ sec.11, T.142 N., R.85 W., Oliver County, Hydrologic Unit 10130101, on left bank 100 ft (30 m) downstream from box culvert on North Dakota Highway 31, 1.5 mi (2.4 km) north of Hannover, and 2.6 mi (4.2 km) upstream from Brady Creek.

DRAINAGE AREA.--16.9 mi² (43.8 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,070 ft (631 m), from topographic map.

REMARKS.--Records good except those for the winter period, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,440 ft³/s (40.8 m³/s) Apr. 17, 1979, gage height, 9.08 ft (2.768 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 59 ft³/s (1.67 m³/s) June 12, gage height, 3.84 ft (1.170 m), only peak above base of 50 ft³/s (1.42 m³/s); maximum gage height, 4.51 ft (1.375 m) Mar. 19, backwater from ice; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.09	.00	.00	.00	.00	5.5	.22	.10	.00	.00	.12
2	.00	.09	.00	.00	.00	.00	5.0	.32	.10	.00	.00	.22
3	.00	.08	.00	.00	.00	.00	4.8	.38	.07	.00	.00	.04
4	.00	.08	.05	.00	.00	.00	4.4	.38	.08	.00	.00	.00
5	.00	.08	.30	.00	.00	.00	4.8	.44	.52	.00	.00	.00
6	.00	.09	.32	.00	.00	.00	4.6	.31	.75	.00	.00	.00
7	.00	.09	.50	.00	.00	.00	4.4	.22	.60	.00	.00	.00
8	.00	.07	.20	.00	.00	.00	3.5	.20	.67	.00	.00	.00
9	.00	.05	.06	.00	.00	.00	3.4	.24	.44	.00	.00	.00
10	.00	.06	.06	.00	.00	.00	3.8	.21	.27	.00	.00	.00
11	.00	.06	.07	.00	.00	.00	3.5	.15	.10	.00	.00	.00
12	.00	.06	.08	.00	.00	.00	2.9	.12	21	.00	.00	.00
13	.00	.07	.07	.00	.00	.00	2.6	.12	12	.00	.00	.00
14	.00	.08	.02	.00	.00	.04	2.3	.14	7.2	.00	.00	.00
15	.00	.15	.02	.00	.00	1.3	2.1	.12	3.6	.00	.00	.00
16	.00	.19	.00	.00	.00	5.8	1.8	.12	2.0	.00	.00	.00
17	.00	.27	.00	.00	.00	37	1.5	.10	1.2	.00	.00	.00
18	.00	.32	.00	.00	.00	21	1.2	.11	.67	.00	.00	.00
19	.00	.32	.16	.00	.00	34	.97	.11	.44	.00	.00	.00
20	.05	.22	.02	.00	.00	15	.75	.09	.38	.00	.00	.00
21	.09	.19	.08	.00	.00	7.0	.67	.07	.38	.00	.00	.00
22	.06	.12	.04	.00	.00	4.5	.32	.04	.38	.00	.00	.00
23	.05	.10	.00	.00	.00	3.0	.22	.01	.24	.00	.00	.00
24	.04	.08	.00	.00	.00	2.1	.18	.00	.07	.00	.00	.00
25	.07	.06	.00	.00	.00	1.7	.15	.00	.01	.00	.00	.00
26	.09	.03	.00	.00	.00	2.3	.15	.00	.00	.00	.00	.00
27	.09	.01	.00	.00	.00	3.2	.18	.00	.00	.00	.00	.01
28	.08	.00	.00	.00	.00	3.8	.22	.00	.00	.00	.00	.00
29	.08	.00	.00	.00	.00	4.0	.22	.00	.00	.00	.00	.00
30	.08	.00	.00	.00	---	4.9	.27	.04	.00	.00	.00	.00
31	.09	---	.00	.00	---	6.0	---	.09	---	.00	.00	---
TOTAL	.87	3.11	2.05	.00	.00	156.64	66.40	4.35	53.27	.00	.00	.39
MEAN	.028	.10	.066	.000	.000	5.05	2.21	.14	1.78	.000	.000	.013
MAX	.09	.32	.50	.00	.00	37	5.5	.44	21	.00	.00	.22
MIN	.00	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.00
AC-FT	1.7	6.2	4.1	.00	.00	311	132	8.6	106	.00	.00	.8

CAL YR 1979 TOTAL 1481.00 MEAN 4.06 MAX 650 MIN .00 AC-FT 2940
WTR YR 1980 TOTAL 287.08 MEAN .78 MAX 37 MIN .00 AC-FT 569

06342040 SQUARE BUTTE CREEK NEAR HANNOVER, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV 13...	1520	.07	1120	8.1	.0	.5	12.4	92	K14	42	430	78
DEC 13...	1000	.07	1300	7.9	-11.0	.0	--	--	K11	61	480	75
MAR 21...	1440	7.0	445	7.6	4.0	.5	12.1	91	100	K21000	140	38
APR 18...	1055	1.3	980	8.2	25.5	12.5	10.2	103	K4	K18	380	110
MAY 05...	1620	.43	1220	8.3	22.0	18.0	11.2	126	28	87	440	84
JUN 04...	1015	.07	1080	8.6	22.5	19.5	11.2	130	K2000	170	350	74

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 13...	92	49	90	45	1.9	6.4	429	0	352	5.5	270	6.1
DEC 13...	100	57	98	45	1.9	12	494	0	405	10	340	8.4
MAR 21...	29	16	24	25	1.0	17	124	0	102	5.0	120	4.8
APR 18...	76	46	76	30	1.9	6.7	331	0	270	3.3	290	5.9
MAY 05...	87	55	100	33	2.1	6.3	434	0	356	3.5	290	5.8
JUN 04...	45	57	120	42	3.3	7.1	298	19	276	1.4	330	5.3

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
NOV 13...	.5	13	748	739	1.02	.14	.04	.01	.05	.06	.49	.54
DEC 13...	.6	19	878	879	1.19	.17	.06	.05	.02	.02	.72	.74
MAR 21...	.1	8.3	306	281	.42	5.78	.50	--	.53	.64	2.1	2.6
APR 18...	.4	8.6	671	674	.91	2.36	.02	.03	.00	.00	.51	.51
MAY 05...	.5	6.1	805	765	1.09	.93	.01	.05	.03	.04	.77	.80
JUN 04...	.5	.4	739	732	1.01	.14	.03	.02	.06	.07	.84	.90

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342040 SQUARE BUTTE CREEK NEAR HANNOVER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)
NOV 13...	.58	2.6	.030	.09	.000	--	--	--	--	--	--
DEC 13...	.80	3.5	.050	.15	.030	--	--	--	--	--	--
MAR 21...	3.1	14	.470	1.4	.410	40	3	2	--	100	50
APR 18...	.53	2.3	.070	.21	.050	10	--	--	--	--	--
MAY 05...	.81	3.6	.050	.15	.040	--	--	--	--	--	--
JUN 04...	.93	4.1	.060	.18	.040	40	2	0	50	100	50

DATE	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, SUSPENDED RECOV. (UG/L AS BE) (01011)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)
NOV 13...	--	--	--	--	--	--	170	--	--	--	--
DEC 13...	--	--	--	--	--	--	190	--	--	--	--
MAR 21...	50	--	0	0	<1	--	200	0	0	0	--
APR 18...	80	--	--	--	<1	--	160	--	--	0	--
MAY 05...	--	--	--	--	--	--	160	--	--	--	--
JUN 04...	50	700	0	--	<1	1	190	0	0	0	9

DATE	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM SUSPENDED RECOVERABLE (UG/L AS LI) (01131)
NOV 13...	--	--	--	--	--	--	--	--	20	--	--
DEC 13...	--	--	--	--	--	--	--	--	50	--	--
MAR 21...	2	0	<3	--	4	0	5	--	220	10	0
APR 18...	--	--	<3	--	--	--	<10	--	46	--	--
MAY 05...	--	--	--	--	--	--	--	--	10	--	--
JUN 04...	0	--	<3	20	6	--	<10	13	26	60	1

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, SUSPENDED RECOV. (UG/L AS MO) (01061)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)
MAR 21...	19	110	10	100	.1	.2	.0	--	1	0	<10
APR 18...	49	--	--	16	--	.0	--	--	--	--	<10
MAY 05...	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	59	30	20	8	.1	.0	.1	.01	0	0	0

06342040 SQUARE BUTTE CREEK NEAR HANNOVER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
NOV 13...	--	--	--	--	--	--	--	--	--	--	--
DEC 13...	--	--	--	--	--	--	--	--	--	--	--
MAR 21...	--	3	3	0	--	0	0	0	--	340	<6.0
APR 18...	--	--	--	3	--	--	--	0	--	950	<3.0
MAY 05...	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	0	5	4	1	30	0	0	0	0	810	<6.0

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
NOV 13...	--	--	--	--	--	--	--
DEC 13...	--	--	--	--	--	--	--
MAR 21...	10	0	13	--	<4.4	.5	16
APR 18...	--	--	<3	--	--	--	--
MAY 05...	--	--	--	--	--	--	--
JUN 04...	20	--	<3	25	<10	<.4	8.9

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
NOV 13...	--	--	--	7.9	.1	18	.00
DEC 13...	--	--	--	15	.6	55	.01
MAR 21...	<.4	17	<.4	39	2.2	17	.32
APR 18...	--	--	--	8.9	.3	19	.07
MAY 05...	--	--	--	18	.6	24	.03
JUN 04...	.5	8.6	.5	20	.7	7	.00

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)
JUN 04...	15	18	34	49	53	68	75	92	100

06342040 SQUARE BUTTE CREEK NEAR HANNOVER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO JUNE 1980

DATE	NOV 13,79	DEC 13,79	MAR 21,80	APR 18,80	MAY 5,80	JUN 4,80
TIME	1520	1000	1440	1055	1620	1015
TOTAL CELLS/ML	1500	2800	7000	1500	620	880
DIVERSITY: DIVISION	0.4	1.2	0.3	1.9	1.3	1.9
.CLASS	0.5	1.2	0.3	1.9	1.3	1.9
..ORDER	0.5	1.5	0.5	2.6	2.1	2.3
...FAMILY	0.5	1.7	0.5	2.8	2.2	2.5
....GENUS	0.5	1.7	0.5	2.9	2.2	2.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	26	1	83	1	13	1	14	2	27	3
....CHLORELLA	--	-	100	4	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	41	5
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	83	1	--	-	82	13	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	14	1	1800#	64	*	0	180	12	--	-	14	2
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	--	-	*	0	52	3	69	11	--	-
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	27	3
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	41	7	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	14	2
....RHOICOSPHENIA	--	-	--	-	--	-	--	-	--	-	14	2
...FRAGILARIACEAE												
....SYNEDRA	--	-	52	2	--	-	100	7	14	2	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	52	2	*	0	--	-	--	-	--	-
...MERIDIONACEAE												
....MERIDION	--	-	26	1	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	--	-	26	1	--	-	--	-	--	-	14	2
....PINNULARIA	--	-	--	-	--	-	13	1	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	43	3	100	4	69	1	230#	15	14	2	41	5
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	14	1	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	14	1	--	-	--	-	13	1	--	-	370#	42
...CRYPTOMONADACEAE												
....CRYPTOMONAS	14	1	570#	21	--	-	64	4	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	1400#	93	--	-	--	-	240#	16	69	11	82	9
....COCCOCHLORIS	--	-	--	-	120	2	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	6600#	94	460#	31	320#	51	210#	23
....SPIRULINA	--	-	--	-	*	0	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	26	2	--	-	--	-
....TRACHELOMONAS	--	-	26	1	*	0	100	7	--	-	27	3

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
      * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND

LOCATION.--Lat 47°06'08", long 101°15'22", in SW¼NW¼SW¼ sec.19, T.142 N., R.83 W., Oliver County, Hydrologic Unit 10130101, on left bank 30 ft (9 m) downstream from bridge on county road 2 mi (3.2 km) southeast of Center, and 2 mi (3.2 km) upstream from Nelson Lake.

DRAINAGE AREA.--75.8 mi² (196 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,930 ft (588 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,670 ft³/s (104 m³/s) Apr. 17, 1979, gage height, 9.96 ft (3.036 m); minimum observed discharge, 0.01 ft³/s (<0.001 m³/s) Mar. 7, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 84 ft³/s (2.38 m³/s) Mar. 19, gage height, 4.73 ft (1.442 m); only peak above base of 70 ft³/s (1.98 m³/s); minimum daily, 0.61 ft³/s (0.017 m³/s) May 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.83	1.5	1.1	.85	.85	1.2	9.8	2.4	.87	1.4	.95	2.7
2	.72	1.4	1.2	.80	.90	1.2	9.8	2.4	.87	1.4	.98	1.9
3	.72	1.4	1.2	.75	.95	1.2	8.6	2.4	1.5	1.6	1.0	1.8
4	.67	1.4	1.4	.70	1.0	1.2	7.8	1.9	12	1.5	1.6	1.5
5	.83	1.4	1.6	.80	1.1	1.2	7.6	1.8	9.1	1.2	1.3	1.3
6	.72	1.3	1.6	.90	1.3	1.2	7.2	1.7	2.8	1.2	1.2	1.3
7	1.0	1.4	1.6	.90	1.2	1.2	7.2	1.6	2.1	1.2	1.1	1.5
8	1.1	1.4	1.4	.80	1.3	1.1	6.0	1.6	1.8	1.3	1.1	1.3
9	1.0	1.4	1.3	.70	1.4	1.3	5.6	1.7	1.7	1.3	1.5	1.1
10	1.2	1.5	1.4	1.0	1.3	1.4	5.6	1.7	1.3	1.5	4.5	1.3
11	1.3	1.5	1.4	1.1	1.2	1.2	5.2	1.5	1.8	1.6	1.7	1.4
12	1.2	1.4	1.2	1.0	1.2	1.2	4.6	1.6	32	1.1	1.4	1.5
13	1.1	1.4	1.1	1.0	1.2	1.7	4.6	1.6	28	1.1	1.3	1.4
14	1.4	1.6	1.0	1.0	1.2	2.7	4.6	1.5	29	1.1	1.3	1.3
15	1.3	1.6	.95	1.0	1.1	8.8	4.4	1.5	21	1.0	1.3	1.3
16	1.1	1.6	.90	1.1	1.2	30	4.1	1.3	17	1.0	2.3	1.3
17	1.2	1.6	.90	1.1	1.3	28	4.1	1.3	12	1.0	2.4	1.3
18	1.2	1.5	1.0	1.2	1.3	42	3.8	1.3	6.0	.98	1.6	1.3
19	1.6	1.9	1.2	1.2	1.3	65	3.6	1.3	4.4	3.9	1.4	1.4
20	1.6	1.5	1.1	1.2	1.3	52	3.5	1.1	3.6	2.2	1.8	1.3
21	1.4	1.3	1.2	1.2	1.2	18	3.3	.94	3.1	1.6	1.8	1.3
22	1.4	1.2	1.1	1.1	1.2	16	3.3	1.1	2.8	1.3	1.5	1.3
23	1.3	1.3	1.1	1.1	1.2	14	3.0	.94	2.4	1.3	1.9	1.4
24	1.3	1.2	1.0	1.2	1.3	11	2.9	.80	2.1	1.3	1.8	1.4
25	1.5	1.2	1.0	1.1	1.2	9.1	2.9	.73	1.8	1.2	1.5	1.5
26	1.5	1.2	1.0	1.1	1.2	9.1	3.2	.67	1.6	1.1	1.4	1.5
27	1.6	1.1	1.1	1.0	1.3	8.6	2.6	.61	1.8	1.0	1.5	1.4
28	1.6	1.1	1.2	1.0	1.2	8.8	2.6	1.3	1.7	1.0	1.6	1.3
29	1.5	1.1	1.1	.90	1.2	9.4	2.6	.94	1.6	1.0	1.6	1.6
30	1.6	1.1	1.0	.85	---	11	2.5	.80	1.5	.98	1.4	1.5
31	2.0	---	.90	.80	---	11	---	.94	---	.98	2.4	---
TOTAL	38.49	41.5	36.25	30.45	34.60	370.8	146.6	42.97	209.24	41.34	50.13	43.4
MEAN	1.24	1.38	1.17	.98	1.19	12.0	4.89	1.39	6.97	1.33	1.62	1.45
MAX	2.0	1.9	1.6	1.2	1.4	65	9.8	2.4	32	3.9	4.5	2.7
MIN	.67	1.1	.90	.70	.85	1.1	2.5	.61	.87	.98	.95	1.1
AC-FT	76	82	72	60	69	735	291	85	415	82	99	86

CAL YR 1979 TOTAL 4058.51 MEAN 11.1 MAX 1370 MIN .53 AC-FT 8050
WTR YR 1980 TOTAL 1085.77 MEAN 2.97 MAX 65 MIN .61 AC-FT 2150

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
04...	1245	.64	1180	8.3	17.0	12.0	9.0	88	130	59	290	0
NOV												
14...	1135	1.5	1260	8.1	6.5	2.0	12.8	98	97	23	320	0
DEC												
06...	1215	1.6	1420	8.0	7.0	2.0	11.6	92	26	180	360	0
JAN												
10...	1245	.99	1390	--	-5.0	1.0	--	--	73	37	340	0
FEB												
07...	0930	1.2	1200	7.8	-7.5	.0	7.8	57	130	53	290	0
MAR												
12...	0955	1.2	1150	7.7	-4.0	.5	--	--	K120	52	290	0
21...	1155	26	430	7.9	4.0	.5	12.7	95	1100	K11000	120	12
APR												
17...	1500	4.2	805	8.3	25.5	13.0	11.2	112	K9	K15	210	0
MAY												
07...	1005	1.5	1100	8.4	10.0	11.5	--	--	120	170	270	0
29...	0850	.97	--	14.5	18.5	--	--	--	--	--	--	--
JUN												
03...	0900	.90	1440	7.7	19.0	17.5	6.2	68	450	480	410	26
JUL												
09...	0850	1.2	1390	8.1	21.0	18.0	7.4	85	620	400	360	0
AUG												
27...	0945	1.5	1240	8.2	13.5	15.0	6.9	72	240	270	290	0
SEP												
18...	0850	1.2	1310	7.9	6.5	10.5	9.0	85	200	140	290	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
04...	60	35	150	52	3.8	7.5	483	0	396	3.9	220	7.0
NOV												
14...	67	37	180	69	4.4	6.5	534	0	438	6.8	260	7.5
DEC												
06...	73	44	190	68	4.3	7.1	505	0	410	8.1	340	10
JAN												
10...	77	36	180	53	4.2	6.1	--	--	--	--	270	8.6
FEB												
07...	65	31	150	52	3.8	5.8	542	0	444	14	220	7.2
MAR												
12...	66	31	170	55	4.3	5.2	498	0	408	16	240	6.2
21...	25	13	33	34	1.5	18	132	0	108	2.7	95	4.8
APR												
17...	45	23	98	50	3.3	6.4	309	0	253	2.5	180	5.9
MAY												
07...	57	30	150	54	4.0	6.4	451	1	372	2.9	240	6.2
29...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
03...	83	48	200	51	4.8	7.8	464	0	380	15	410	12
JUL												
09...	76	42	210	55	5.3	7.5	488	0	400	6.2	390	7.0
AUG												
27...	60	33	180	57	4.6	6.7	446	0	366	4.5	310	6.3
SEP												
18...	61	34	190	58	4.8	6.2	487	0	399	9.8	310	8.5

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
04...	.3	11	776	729	1.06	1.34	.02	--	.02	.02	.91	.93
NOV												
14...	.3	12	834	847	1.13	3.38	2.9	2.9	.06	.07	.63	.69
DEC												
06...	.3	14	972	944	1.32	4.30	4.7	3.7	.04	.05	.91	.95
JAN												
10...	.3	19	842	958	1.15	2.25	2.0	--	.09	.11	1.0	1.1
FEB												
07...	.2	18	808	772	1.10	2.68	1.7	1.7	.19	.23	.75	.94
MAR												
12...	.3	21	766	791	1.04	2.48	1.4	1.3	.25	.30	.65	.90
21...	.1	7.6	291	263	.40	20.4	.85	--	.83	1.0	2.5	3.3
APR												
17...	.2	6.6	515	521	.70	5.84	.56	.57	.08	.10	.60	.68
MAY												
07...	.2	7.8	703	722	.96	2.85	.18	.19	.13	.16	1.1	1.2
29...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
03...	.2	12	1020	1010	1.39	2.48	1.1	1.1	.35	.42	.85	1.2
JUL												
09...	.5	15	988	993	1.34	3.31	.47	.50	.13	.16	1.3	1.4
AUG												
27...	.2	7.0	1030	824	1.40	4.17	.14	.00	.23	.28	1.2	1.4
SEP												
10...	.3	12	974	868	1.32	3.16	1.2	1.3	.11	.13	.89	1.0

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT											
04...	.95	4.2	.010	.03	.000	--	--	--	--	--	--
NOV											
14...	3.6	16	.040	.12	.000	--	--	--	--	--	--
DEC											
06...	5.7	25	.020	.06	.000	--	--	--	--	--	--
JAN											
10...	3.1	14	.030	.09	.010	--	--	--	--	--	--
FEB											
07...	2.6	12	.020	.06	.000	--	--	--	--	--	--
MAR											
12...	2.3	10	.030	.09	.010	--	--	--	--	--	--
21...	4.2	18	.520	1.6	.430	60	2	1	--	0	0
APR											
17...	1.2	5.5	.090	.28	.040	10	--	--	--	--	--
MAY											
07...	1.4	6.1	.080	.25	.010	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	2.3	10	.070	.21	.010	0	--	--	--	--	--
JUL											
09...	1.9	8.3	.120	.37	.010	0	4	2	11	100	0
AUG											
27...	1.5	6.8	.100	.31	.010	--	--	--	--	--	--
SEP											
10...	2.2	9.7	.040	.12	.010	--	--	--	--	--	--

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT											
04...	--	--	--	--	--	--	370	--	--	--	--
NOV											
14...	--	--	--	--	--	--	360	--	--	--	--
DEC											
06...	--	--	--	--	--	--	480	--	--	--	--
JAN											
10...	--	--	--	--	--	--	360	--	--	--	--
FEB											
07...	--	--	--	--	--	--	300	--	--	--	--
MAR											
12...	--	--	--	--	--	--	300	--	--	--	--
21...	60	--	0	0	<1	--	190	0	0	0	--
APR											
17...	80	--	--	--	<1	--	240	--	--	0	--
MAY											
07...	--	--	--	--	--	--	460	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	150	--	--	--	<1	--	750	--	--	0	--
JUL											
09...	170	3800	0	--	<1	1	670	10	10	0	10
AUG											
27...	--	--	--	--	--	--	710	--	--	--	--
SEP											
18...	--	--	--	--	--	--	560	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT											
04...	--	--	--	--	--	--	--	--	10	--	--
NOV											
14...	--	--	--	--	--	--	--	--	30	--	--
DEC											
06...	--	--	--	--	--	--	--	--	20	--	--
JAN											
10...	--	--	--	--	--	--	--	--	50	--	--
FEB											
07...	--	--	--	--	--	--	--	--	40	--	--
MAR											
12...	--	--	--	--	--	--	--	--	0	--	--
21...	2	0	<3	--	5	0	9	--	310	20	2
APR											
17...	--	--	<3	--	--	--	<10	--	11	--	--
MAY											
07...	--	--	--	--	--	--	--	--	40	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	--	--	<3	--	--	--	<10	--	13	--	--
JUL											
09...	1	--	<3	30	3	--	36	19	24	60	3
AUG											
27...	--	--	--	--	--	--	--	--	120	--	--
SEP											
18...	--	--	--	--	--	--	--	--	80	--	--

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, SUSPENDED RECOV. (UG/L AS MO) (01061)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)
MAR 12...	--	--	--	--	--	--	--	--	--	--	--
21...	18	140	30	110	.1	.1	.0	--	0	0	<10
APR 17...	35	--	--	91	--	.1	--	--	--	--	<10
MAY 07...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
JUN 03...	63	--	--	110	--	.2	--	--	--	--	<10
JUL 09...	57	360	140	220	.1	.0	.1	.03	3	--	<10
AUG 27...	--	--	--	--	--	--	--	--	--	--	--
SEP 18...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
MAR 12...	--	--	--	--	--	--	--	--	--	--	--
21...	--	3	0	3	--	0	0	0	--	300	<6.0
APR 17...	--	--	--	4	--	--	--	0	--	700	<3.0
MAY 07...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
JUN 03...	--	--	--	4	--	--	--	1	--	1400	<6.0
JUL 09...	2	4	2	2	30	1	0	1	0	1300	<6.0
AUG 27...	--	--	--	--	--	--	--	--	--	--	--
SEP 18...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)
OCT 04...	--	--	--	--	--	--	--
NOV 14...	--	--	--	--	--	--	--
DEC 06...	--	--	--	--	--	--	--
JAN 10...	--	--	--	--	--	--	--
FEB 07...	--	--	--	--	--	--	--
MAR 12...	--	--	--	--	--	--	--
21...	20	10	10	--	<3.9	1.4	16
APR 17...	--	--	<3	--	--	--	--
MAY 07...	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--
JUN 03...	--	--	<3	--	--	--	--
JUL 09...	30	--	<3	46	<16	1.8	9.0
AUG 27...	--	--	--	--	--	--	--
SEP 18...	--	--	--	--	--	--	--

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT							
04...	--	--	--	11	.6	34	.06
NOV							
14...	--	--	--	18	.2	34	.14
DEC							
06...	--	--	--	14	.4	120	.53
JAN							
10...	--	--	--	19	--	90	.24
FEB							
07...	--	--	--	12	.5	40	.13
MAR							
12...	--	--	--	13	.3	53	.17
21...	1.1	16	1.1	31	2.6	39	2.7
APR							
17...	--	--	--	13	1.0	29	.33
MAY							
07...	--	--	--	15	1.8	59	.24
29...	--	--	--	--	--	60	.16
JUN							
03...	--	--	--	28	1.2	69	.17
JUL							
09...	1.4	8.7	1.3	26	1.8	84	.28
AUG							
27...	--	--	--	19	1.1	54	.22
SEP							
18...	--	--	--	47	.9	26	.08

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)
JUL									
09...	18	23	34	46	55	65	83	93	100

DATE	LENGTH OF EXPOSURE (DAYS) (00022)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
OCT					
04...	23	15.0	2.82	9.76	11.1
SEP					
18...	32	3.03	.150	--	--

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 4,79	NOV 14,79	DEC 6,79	JAN 10,80	FEB 7,80
TIME	1245	1135	1215	1245	0930
TOTAL CELLS/ML	30000	4200	2000	670	160
DIVERSITY: DIVISION	1.1	0.7	0.9	1.4	1.7
.CLASS	1.1	1.1	1.4	1.4	1.7
..ORDER	1.2	1.2	1.5	1.8	1.9
...FAMILY	1.4	1.8	1.5	2.0	3.3
....GENUS	1.6	1.9	0.0	2.0	3.3

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	--	-	--	-	12	2	25#	16
....CHLORELLA	3600	12	--	-	--	-	--	-	--	-
....CHODATELLA	1800	6	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	510	2	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	1500	5	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	20	13
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERIA	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	260	1	250	6	580#	29	390#	59	5	3
...VOLVOCACEAE										
....PANDORINA	--	-	570	14	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	21000#	69	360	9	330#	17	69	10	--	-
....MELOSIRA	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	36	1	--	-	--	-	--	-
....COCCONEIS	260	1	--	-	--	-	--		--	-
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	6	1	15	10
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	6	1	10	6
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	15	10
...NAVICULACEAE										
....NAVICULA	--	-	--	-	--	-	6	1	5	3
....PLEUROSIGMA	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	--	-	--	-	19	1	12	2	15	10
...SURIRELLACEAE										
....SURIRELLA	--	-	--	-	--	-	--	-	10	6
...TABELLARIACEAE										
....TABELLARIA	--	-	--	-	--	-	75	11	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...CHROMULINACEAE	--	-	--	-	39	2	--	-	--	-
....CHRYSOCOCCUS	--	-	2500#	60	1000#	51	--	-	--	-
...OCHROMONADACEAE										
....KEPHYRIOPSIS	--	-	390	9	--	-	--	-	--	-
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-
....STENOCALYX	--	-	72	2	--	-	--	-	--	-
...SYNURACEAE										
....SYNURA	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	1000	3	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	OCT 4,79 1245		NOV 14,79 1135		DEC 6,79 1215		JAN 10,80 1245		FEB 7,80 0930	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-
....DACTYLOCOCCOPSIS	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	25#	16
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	--	-	6	1	--	-
....LEPOCINCLIS	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	260	1	--	-	--	-	--	-	10	6
...PETALOMONADACEAE										
....CALYCOMONAS	--	-	--	-	--	-	12	2	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	69	10	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	MAR 12,80 0955		MAR 21,80 1155		APR 17,80 1500		MAY 7,80 1005	
TOTAL CELLS/ML	0		400		4200		11000	
DIVERSITY: DIVISION	0.0		1.1		1.3		1.7	
.CLASS	0.0		1.1		1.3		1.9	
..ORDER	0.0		1.6		2.1		2.4	
...FAMILY	0.0		2.9		2.5		2.9	
....GENUS	0.0		3.1		2.7		3.3	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	69	1
....MICRACTINIUM	--	-	--	-	110	3	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	30	8	370	9	--	-
....CHLORELLA	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	1400	13
....KIRCHNERIELLA	--	-	--	-	--	-	69	1
....OOCYSTIS	--	-	--	-	--	-	410	4
....NESTELLA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	--	-	270	3
....SCENEDESMUS	--	-	--	-	73	2	550	5
....TETRASTRUM	--	-	--	-	--	-	270	3
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	1600#	39	480	4
...VOLVOCACEAE								
....PANDORINA	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	45	11	150	4	1800#	16
....MELOSIRA	--	-	--	-	--	-	69	1
....STEPHANODISCUS	--	-	--	-	580	14	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	69	1
....COCCONEIS	--	-	--	-	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	--	-	--	-
...DIATOMACEAE								
....DIATOMA	--	-	56	14	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	10	3	--	-	--	-
....SYNEDRA	--	-	30	8	--	-	890	8
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	10	3	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	61#	15	260	6	210	2
....PLEUROSIGMA	--	-	5	1	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	76#	19	730#	18	270	3
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	--	-
...TABELLARIACEAE								
....TABELLARIA	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...CHROMULINACEAE	--	-	--	-	--	-	--	-
....CHRYSOCOCCUS	--	-	--	-	--	-	620	6
...OCHROMONADACEAE								
....KEPHYRIOPSIS	--	-	--	-	--	-	--	-
....OCHROMONAS	--	-	--	-	--	-	69	1
....STENOCALYX	--	-	--	-	--	-	--	-
...SYNURACEAE								
....SYNURA	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	MAR 12,80		MAR 21,80		APR 17,80		MAY 7,80	
TIME	0955		1155		1500		1005	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	110	3	3200#	29
....DACTYLOCOCCOPSIS	--	-	--	-	73	2	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	71#	18	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	5	1	--	-	69	1
....LEPOCINCLIS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	73	2	69	1
...PETALOMONADACEAE								
....CALYCOMONAS	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

		JUN 3,80	JUL 9,80	AUG 27,80	SEP 18,80
DATE		JUN 3,80	JUL 9,80	AUG 27,80	SEP 18,80
TIME		0900	0850	0945	0850
TOTAL CELLS/ML		26000	4200	3500	940
DIVERSITY:	DIVISION	1.8	1.7	1.3	1.5
	.CLASS	2.0	1.7	1.3	1.5
	..ORDER	2.5	2.3	2.1	2.2
	...FAMILY	3.0	2.6	2.5	2.5
	....GENUS	3.4	2.7	2.9	2.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...COELASTRACEAE								
....COELASTRUM	1300	5	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	1500	6	120	3	33	1	--	-
....CHLORELLA	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	62	1	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	490	2	--	-	67	2	--	-
....OOCYSTIS	1300	5	--	-	67	2	--	-
....WESTELLA	1300	5	--	-	--	-	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	370	9	--	-	--	-
....SCENEDESMUS	2600	10	--	-	--	-	52	5
....TETRASTRUM	--	-	--	-	130	4	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	--	-	33	1	--	-
....CHLAMYDOMONAS	160	1	370	9	630#	18	150#	16
...VOLVOCACEAE								
....PANDORINA	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	6600#	26	430	10	1100#	30	190#	21
....MELOSIRA	160	1	93	2	67	2	26	3
....STEPHANODISCUS	--	-	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	33	1	--	-
...DIATOMACEAE								
....DIATOMA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	490	2	93	2	230	7	39	4
....PLEUROSIGMA	--	-	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	2300	9	1400#	33	760#	22	230#	25
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	--	-	13	1
...TABELLARIACEAE								
....TABELLARIA	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...CHROMULINACEAE	--	-	--	-	--	-	--	-
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-
...OCHROMONADACEAE								
....KEPHYRIOPSIS	320	1	--	-	--	-	--	-
....OCHROMONAS	160	1	--	-	--	-	--	-
....STENOCALYX	--	-	--	-	--	-	--	-
...SYNURACEAE								
....SYNURA	160	1	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	13	1
...CRYPTOMONADACEAE								
....CRYPTOMONAS	320	1	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06342200 SQUARE BUTTE CREEK ABOVE NELSON LAKE NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	JUN 3,80		JUL 9,80		AUG 27,80		SEP 18,80	
TIME	0900		0850		0945		0850	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	4400#	17	1100#	25	--	-	220#	23
....DACTYLOCOCCOPSIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	810	3	--	-	--	-	--	-
....SCHIZOTHRIX	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	62	1	130	4	--	-
....LEPOCINCLIS	--	-	--	-	33	1	--	-
....TRACHELOMONAS	1500	6	120	3	200	6	--	-
...PETALOMONADACEAE								
....CALYCOMONAS	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342230 HAGEL CREEK NEAR CENTER, ND

LOCATION.--Lat 47°03'58", long 101°14'11", in SE¼NE¼NE¼ sec.6, T.141 N., R.83 W., Oliver County, Hydrologic Unit 10130101, on right bank 1,200 ft (366 m) upstream from bridge on county road, 0.8 mi (1.3 km) upstream from Nelson Lake, 1 mi (1.6 km) west of Milton R. Young Powerplant, and 4.5 mi (7.2 km) southeast of Center.

DRAINAGE AREA.--45.6 mi² (118 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,950 ft (594 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,150 ft³/s (32.6 m³/s) Apr. 17, 1979, gage height, 7.41 ft (2.259 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 70 ft³/s (1.98 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 5	0815	*445	12.6	5.93	1.807	Aug. 10	0600	107	3.03	3.58	1.091

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.05	.04	.03	.00	.00	4.3	.35	.00	.05	.00	4.5
2	.01	.05	.04	.02	.00	.00	4.2	.31	.00	.03	.00	2.2
3	.00	.06	.05	.02	.00	.00	4.1	.33	.00	.02	.01	1.1
4	.00	.07	.06	.01	.00	.00	3.9	.32	29	.02	.01	.70
5	.00	.08	.06	.01	.00	.00	3.7	.24	138	.01	.04	.49
6	.00	.08	.06	.01	.00	.00	3.3	.19	16	.01	.10	.35
7	.00	.08	.08	.01	.00	.00	3.1	.18	10	.01	.08	.27
8	.00	.08	.09	.01	.00	.00	3.0	.17	7.1	.00	.05	.20
9	.00	.07	.10	.01	.00	.00	2.8	.14	4.9	.00	.06	.13
10	.00	.06	.10	.00	.00	.00	2.9	.08	3.4	.00	40	.10
11	.00	.05	.09	.00	.00	.00	2.8	.06	2.6	.00	7.1	.08
12	.00	.05	.08	.00	.00	.00	2.6	.05	12	.00	6.5	.07
13	.00	.06	.07	.00	.00	.00	2.6	.05	14	.00	7.7	.08
14	.00	.07	.06	.00	.00	.50	2.5	.04	10	.00	5.5	.08
15	.00	.08	.05	.00	.00	5.0	2.4	.04	8.1	.00	4.3	.10
16	.00	.09	.04	.00	.00	13	2.4	.04	6.4	.00	5.2	.10
17	.00	.14	.04	.00	.00	11	2.2	.04	4.6	.00	6.0	.07
18	.00	.16	.05	.00	.00	11	2.0	.04	3.1	.00	3.7	.11
19	.00	.13	.06	.00	.00	16	1.6	.03	2.3	.01	2.7	.17
20	.00	.13	.07	.00	.00	14	1.3	.02	1.7	.11	2.9	.18
21	.00	.14	.06	.00	.00	14	1.2	.02	1.3	.34	4.6	.15
22	.00	.11	.06	.00	.00	11	1.0	.01	1.0	.15	3.3	.15
23	.00	.08	.04	.00	.00	8.5	.83	.01	.77	.05	4.2	.14
24	.00	.08	.03	.00	.00	6.9	.71	.01	.66	.02	6.4	.13
25	.00	.07	.04	.00	.00	5.3	.56	.00	.45	.01	2.8	.13
26	.00	.06	.04	.00	.00	5.3	.52	.00	.30	.01	1.4	.12
27	.00	.06	.06	.00	.00	5.0	.48	.00	.28	.01	.94	.16
28	.01	.06	.05	.00	.00	4.9	.45	.00	.23	.01	.73	.23
29	.01	.05	.04	.00	.00	4.6	.43	.00	.15	.00	.61	.23
30	.02	.05	.04	.00	---	4.7	.38	.00	.08	.01	.53	.18
31	.04	---	.03	.00	---	4.7	---	.00	---	.01	.91	---
TOTAL	.10	2.40	1.78	.13	.00	145.40	64.26	2.77	278.42	.89	118.37	12.70
MEAN	.003	.080	.057	.004	.000	4.69	2.14	.089	9.28	.029	3.82	.42
MAX	.04	.16	.10	.03	.00	16	4.3	.35	138	.34	40	4.5
MIN	.00	.05	.03	.00	.00	.00	.38	.00	.00	.00	.00	.07
AC-FT	.2	4.8	3.5	.3	.00	288	127	5.5	552	1.8	235	25

CAL YR 1979 TOTAL 2090.89 MEAN 5.73 MAX 335 MIN .00 AC-FT 4150
WTR YR 1980 TOTAL 627.22 MEAN 1.71 MAX 138 MIN .00 AC-FT 1240

06342230 HAGEL CREEK NEAR CENTER, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV												
14...	0825	.07	1570	8.2	-.5	1.0	10.1	76	K4	K16	270	0
MAR												
21...	0905	11	740	8.1	3.0	.5	12.8	95	380	9800	130	0
APR												
17...	0950	2.3	1230	8.3	14.0	12.0	10.0	98	<1	K10	210	0
MAY												
06...	1355	.19	1395	8.7	15.0	18.0	12.0	133	44	28	220	0
JUN												
05...	1330	217	--	--	--	--	--	--	--	--	--	--
AUG												
25...	1130	2.8	990	8.5	15.0	19.0	9.5	108	120	110	160	0
SEP												
18...	1245	.12	1040	8.7	11.5	10.5	8.2	77	30	31	160	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV												
14...	50	36	280	81	7.4	13	712	0	584	7.2	310	6.8
MAR												
21...	24	16	110	63	4.0	13	239	0	196	3.0	170	4.2
APR												
17...	41	25	210	68	7.1	9.7	459	0	376	3.7	300	4.5
MAY												
06...	41	29	250	70	8.2	10	561	23	498	1.9	290	4.4
JUN												
05...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
25...	32	19	160	67	5.5	10	379	7	323	2.0	170	3.7
SEP												
18...	28	22	170	68	5.8	9.5	406	22	369	1.4	180	4.2

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV											
14...	.3	2.6	1040	1050	1.41	.20	.08	.01	.11	.13	2.0
MAR											
21...	.1	7.6	476	444	.65	14.6	.58	--	.30	.36	2.2
APR											
17...	.2	3.6	828	821	1.13	5.14	.02	.02	.02	.02	1.5
MAY											
06...	.2	1.4	909	927	1.24	.47	.07	.02	.01	.01	1.4
JUN											
05...	--	--	--	--	--	--	--	--	--	--	--
AUG											
25...	.2	11	730	600	.99	5.52	.00	.00	.14	.17	2.2
SEP											
18...	.2	1.1	550	638	.75	.18	.00	.00	.04	.05	1.4

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342230 HAGEL CREEK NEAR CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)
NOV 14...	2.1	2.2	9.7	.090	.28	.030	--	--	--	--	--
MAR 21...	2.5	3.1	14	.400	1.2	.270	0	0	0	--	200
APR 17...	1.5	1.5	6.7	.120	.37	.060	10	--	--	--	--
MAY 06...	1.4	1.5	6.5	.120	.37	.040	20	3	0	10	400
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
AUG 25...	2.3	2.3	10	.180	.55	.060	--	--	--	--	--
SEP 18...	1.4	1.4	6.2	.070	.21	.050	--	--	--	--	--

DATE	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
NOV 14...	--	--	--	--	--	--	--	530	--	--	--
MAR 21...	100	60	--	0	0	<1	--	268	0	0	0
APR 17...	--	90	--	--	--	<1	--	390	--	--	--
MAY 06...	300	120	220	0	--	<1	1	470	0	0	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
AUG 25...	--	--	--	--	--	--	--	450	--	--	--
SEP 18...	--	--	--	--	--	--	--	390	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
NOV 14...	--	--	--	--	--	--	--	--	100	--	--
MAR 21...	2	0	<3	--	5	0	6	--	230	30	2
APR 17...	--	--	3	--	--	--	<10	--	98	--	--
MAY 06...	0	--	<3	20	4	--	<10	10	24	60	6
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
AUG 25...	--	--	--	--	--	--	--	--	40	--	--
SEP 18...	--	--	--	--	--	--	--	--	240	--	--

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
NOV 14...	--	--	--	--	--	--	--	--	--	--	--
MAR 21...	28	320	230	87	--	.1	.0	--	1	0	<10
APR 17...	47	--	--	5	--	.1	--	--	--	--	<10
MAY 06...	54	170	160	7	3.5	3.4	.0	.04	2	--	<10

06342250 HAGEL CREEK NEAR CENTER, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
NOV 14...	--	--	--	--	--	--	--	--	--	--	--
MAR 21...	--	6	6	0	--	0	0	0	--	350	<6.0
APR 17...	--	--	--	3	--	--	--	0	--	590	5.0
MAY 06...	0	6	2	4	30	0	0	0	0	640	<6.0

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
NOV 14...	--	25	.7	27	.01	--	--	--
MAR 21...	1.9	--	--	33	1.0	--	--	--
APR 17...	--	22	1.1	19	.12	--	--	--
MAY 06...	1.0	23	1.6	28	.01	--	--	--
JUN 05...	--	--	--	1440	844	86	99	100
AUG 25...	--	21	2.3	41	.31	--	--	--
SEP 18...	--	24	.6	14	.00	--	--	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)
NOV 14...	--	--	--	--	--	--	--	--
MAR 21...	20	15	--	<5.9	.9	13	1.8	13
APR 17...	--	<3	--	--	--	--	--	--
MAY 06...	70	<3	35	<13	<.5	12	.9	11
JUN 05...	--	--	--	--	--	--	--	--
AUG 25...	--	--	--	--	--	--	--	--
SEP 18...	--	--	--	--	--	--	--	--

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
SEP 18...	24	2.48	.760	1.18	1.73

06342230 HAGEL CREEK NEAR CENTER, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 14,79		MAR 21,80		APR 17,80		MAY 6,80		AUG 25,80		SEP 18,80	
TIME	0825		0905		0950		1355		1130		1245	
TOTAL CELLS/ML	11000		12000		15000		130000		280000		370	
DIVERSITY: DIVISION	1.9		1.5		1.7		1.0		0.2		1.6	
.CLASS	2.1		1.5		1.8		1.0		0.2		1.6	
..ORDER	2.3		1.6		2.3		1.0		1.1		1.9	
...FAMILY	2.4		1.6		2.5		1.1		1.1		2.1	
....GENUS	2.5		1.7		2.9		1.3		1.6		2.1	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...OOCYSTACEAE												
....ANKISTRODESMUS	270	2	170	1	1100	7	--	-	*	0	26	7
....CHLORELLA	--	-	84	1	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	340	3	280	2	28000#	22	--	-	--	-
....KIRCHNERIELLA	--	-	84	1	--	-	3400	3	--	-	--	-
....OOCYSTIS	--	-	--	-	280	2	--	-	*	0	--	-
....SELENASTRUM	140	1	--	-	1800	12	--	-	*	0	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	820	7	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	850	6	1100	1	2100	1	52	14
....TETRASTRUM	270	2	--	-	--	-	2300	2	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	340	3	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	410	4	--	-	--	-	*	0	*	0	13	3
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	4600#	40	500	4	360	2	*	0	*	0	--	-
....STEPHANODISCUS	--	-	--	-	1100	7	--	-	--	-	--	-
..PENNALES												
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	13	3
...NITZSCHIACEAE												
....NITZSCHIA	210	2	--	-	360	2	--	-	*	0	13	3
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	860	1	--	-	--	-
...OCHROMONADACEAE												
....DINOBRYON	340	3	--	-	140	1	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	140000#	52	--	-
....ANACYSTIS	2500#	22	--	-	5400#	36	93000#	71	40000	14	13	3
....COCCOCHLORIS	--	-	84	1	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	3000#	26	1700	11	--	-	87000#	31	210#	55
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	69	1	--	-	--	-	--	-	*	0	--	-
....TRACHELOMONAS	1700	15	6900#	60	1600	11	860	1	--	-	39	10
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	69	1	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

SQUARE BUTTE CREEK BASIN

06342260 SQUARE BUTTE CREEK BELOW CENTER, ND

LOCATION.--Lat 47°03'25", long 101°11'35", in SE¼ sec.4, T.141 N., R.83 W., Oliver County, Hydrologic Unit 10130101, on right bank at southeast corner of farmyard, and 6 mi (10 km) southeast of Center.

DRAINAGE AREA.--146 mi² (378 km²).

PERIOD OF RECORD.--May 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,865 ft (568 m), from topographic map.

REMARKS.--Records fair. Flow regulated by Nelson Lake 1.5 mi (2.4 km) upstream beginning Aug. 24, 1967, capacity, 5,000 acre-ft (6.16 hm³). The capacity of Nelson Lake was increased to 10,000 acre-ft (12.3 hm³) in August 1975.

AVERAGE DISCHARGE.--15 years, 11.7 ft³/s (0.331 m³/s), 8,480 acre-ft/yr (10.5 hm³/yr); median of yearly mean discharges, 13 ft³/s (0.37 m³/s), 9,420 acre-ft/yr (11.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,700 ft³/s (275 m³/s) June 24, 1966, gage height, 14.35 ft (4.374 m); no flow Feb. 14-26, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 625 ft³/s (17.7 m³/s) June 5, gage height, 6.39 ft (1.948 m); minimum daily, 1.0 ft³/s (0.028 m³/s) several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.2	1.1	1.2	1.2	4.1	9.6	1.1	1.8	6.0	3.7	6.3
2	1.2	1.3	1.1	1.2	1.2	4.1	9.6	1.1	1.9	6.0	4.8	6.1
3	1.2	1.3	1.1	1.2	1.2	4.1	9.6	1.1	6.8	5.8	6.2	6.3
4	1.1	1.4	1.1	1.2	1.2	4.1	9.6	1.1	56	5.8	5.9	6.3
5	1.4	1.4	1.1	1.2	1.2	4.1	9.6	1.2	234	5.8	5.6	4.0
6	1.4	1.4	1.1	1.2	1.2	4.1	9.6	1.2	246	5.9	5.4	1.0
7	1.4	1.4	1.1	1.2	1.1	4.1	10	1.2	187	6.1	5.6	1.0
8	1.6	1.1	1.1	1.2	1.1	4.1	9.6	1.2	5.9	6.1	5.3	1.0
9	1.6	1.2	1.1	1.0	1.1	4.2	9.3	1.2	1.1	6.1	5.8	1.0
10	1.3	1.3	1.1	1.0	1.1	4.2	9.8	1.2	3.0	6.2	6.0	1.0
11	1.1	1.4	1.1	1.0	1.1	4.2	9.7	1.2	5.3	6.2	4.9	1.5
12	1.2	1.4	1.1	1.0	1.1	4.4	9.8	1.2	5.8	6.1	6.1	6.1
13	1.2	1.4	1.1	1.0	1.0	4.5	9.8	1.4	6.2	5.3	5.9	6.3
14	1.4	1.4	1.1	1.0	1.0	4.5	9.9	1.4	5.7	5.1	5.6	6.1
15	1.6	1.3	1.2	1.0	1.0	4.5	10	1.4	5.7	4.9	5.6	6.1
16	1.3	1.2	1.2	1.0	1.0	4.6	10	1.4	5.7	5.1	6.4	5.8
17	1.2	1.2	1.3	1.0	1.0	4.7	9.9	1.4	5.7	5.0	5.9	2.3
18	1.4	1.2	1.4	1.1	1.0	4.7	9.9	1.4	5.9	5.0	5.4	3.5
19	1.6	1.2	1.4	1.1	1.1	4.7	9.8	1.4	5.9	5.9	5.2	1.4
20	1.4	1.2	1.4	1.1	1.2	6.4	9.8	1.4	6.1	5.1	6.1	1.3
21	1.2	1.2	1.3	1.1	1.3	5.0	9.5	1.4	6.1	4.8	5.5	1.3
22	1.4	1.2	1.3	1.1	1.4	4.0	2.2	1.4	6.1	4.6	5.1	1.5
23	1.4	1.2	1.3	1.1	1.5	3.0	1.9	1.4	6.1	4.6	5.2	1.5
24	1.4	1.2	1.3	1.2	1.6	2.5	1.7	1.4	6.3	4.5	4.9	1.5
25	1.3	1.2	1.3	1.2	1.8	1.6	1.6	1.6	6.2	4.6	5.1	1.9
26	1.2	1.2	1.3	1.2	2.6	1.6	1.6	1.4	6.5	4.6	5.0	2.5
27	1.4	1.2	1.3	1.2	3.0	1.6	1.6	1.4	6.5	4.5	3.7	6.1
28	1.3	1.2	1.3	1.2	3.2	1.6	1.6	2.0	6.5	4.3	5.5	6.3
29	1.4	1.2	1.3	1.3	4.0	5.3	1.6	1.9	6.5	4.4	5.9	6.3
30	1.2	1.2	1.3	1.2	---	9.9	1.6	1.6	6.3	4.3	5.9	6.3
31	1.2	---	1.3	1.2	---	9.6	---	2.1	---	3.6	6.0	---
TOTAL	41.6	37.9	37.6	34.9	42.5	134.1	219.6	42.6	864.6	162.5	172.6	109.2
MEAN	1.34	1.26	1.21	1.13	1.47	4.33	7.33	1.37	28.8	5.24	5.57	3.64
MAX	1.6	1.4	1.4	1.3	4.0	9.9	10	2.1	246	6.2	6.1	6.3
MIN	1.1	1.1	1.1	1.0	1.0	1.6	1.6	1.1	1.1	3.6	3.7	1.0
AC-FT	82	75	75	69	84	266	436	84	1710	322	342	217

CAL YR 1979 TOTAL 5912.84 MEAN 16.2 MAX 2600 MIN .53 AC-FT 11730
WTR YR 1980 TOTAL 1899.90 MEAN 5.19 MAX 246 MIN 1.0 AC-FT 3770

06342450 BURNT CREEK NEAR BISMARCK, ND

LOCATION.--Lat 46°54'54", long 100°48'48", in SW¼NW¼SW¼ sec.29, T.140 N., R.80 W., Burleigh County, Hydrologic Unit 10130101, on left bank on upstream side of county highway bridge, and 7 mi (11 km) northwest of Bismarck.

DRAINAGE AREA.--108 mi² (280 km²).

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,690 ft (515 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--13 years, 8.15 ft³/s (0.231 m³/s), 5,900 acre-ft/yr (7.27 hm³/yr); median of yearly mean discharge, 4.7 ft³/s (0.13 m³/s), 3,400 acre-ft/yr (4.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,000 ft³/s (283 m³/s) Apr. 18, 1979, gage height, 16.93 ft (5.160 m), from rating curve extended above 2,200 ft³/s (62.3 m³/s) on basis of culvert and flow-over-road measurement of peak flow; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 130 ft³/s (3.68 m³/s) Mar. 18, gage height, 7.64 ft (2.329 m), backwater from ice, only peak above base of 100 ft³/s (2.83 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	15	2.8	5.5	.00	.00	.75
2	.00	.00	.00	.00	.00	.00	1	3.1	3.6	.00	.00	.60
3	.00	.00	.00	.00	.00	.00	5.0	3.2	2.2	.00	.00	.52
4	.00	.00	.00	.00	.00	.00	2.0	3.4	1.3	.00	.00	.76
5	.00	.00	.00	.00	.00	.00	5.0	3.7	1.4	.00	.00	.60
6	.00	.00	.00	.00	.00	.00	5.3	3.6	2.6	.00	.00	.43
7	.00	.00	.00	.00	.00	.00	5.8	3.3	3.8	.00	.00	.34
8	.00	.00	.00	.00	.00	.00	5.7	3.1	4.1	.00	.00	.28
9	.00	.00	.00	.00	.00	.00	4.9	2.9	3.0	.00	.00	.25
10	.00	.00	.00	.00	.00	.00	3.8	2.6	3.4	.00	4.9	.23
11	.00	.00	.00	.00	.00	.00	3.1	2.2	2.7	.00	.12	.22
12	.00	.00	.00	.00	.00	.00	2.0	2.0	1.7	.00	.00	.22
13	.00	.00	.00	.00	.00	.10	1.5	1.6	1.7	.00	.00	.20
14	.00	.00	.00	.00	.00	3.0	1.2	1.3	1.0	.00	.00	.17
15	.00	.00	.00	.00	.00	5.0	.78	.92	.40	.00	.00	.18
16	.00	.00	.00	.00	.00	60	.88	.52	.25	.00	.00	.15
17	.00	.00	.00	.00	.00	50	.56	.34	.27	.00	.00	.15
18	.00	.00	.00	.00	.00	120	.64	.21	.21	.00	.00	.12
19	.00	.00	.00	.00	.00	90	.76	.12	.17	.00	.00	.14
20	.00	.00	.00	.00	.00	70	.84	.07	.16	.00	.44	.13
21	.00	.00	.00	.00	.00	30	.88	.08	.14	.00	.37	.13
22	.00	.00	.00	.00	.00	30	.28	.14	.11	.00	1.1	.11
23	.00	.00	.00	.00	.00	20	.21	.13	.09	.00	1.2	.07
24	.00	.00	.00	.00	.00	15	.80	.08	.07	.00	18	.04
25	.00	.00	.00	.00	.00	8.0	1.1	.02	.04	.00	11	.03
26	.00	.00	.00	.00	.00	6.0	1.4	.00	.02	.00	6.6	.01
27	.00	.00	.00	.00	.00	6.0	1.5	.00	.01	.00	3.6	.00
28	.00	.00	.00	.00	.00	6.0	1.5	9.3	.02	.00	2.5	.00
29	.00	.00	.00	.00	.00	6.0	1.8	41	.01	.00	1.7	.00
30	.00	.00	.00	.00	---	10	2.2	11	.01	.00	1.1	.00
31	.00	---	.00	.00	---	15	---	5.5	---	.00	.90	---
TOTAL	.00	.00	.00	.00	.00	550.10	85.85	108.23	39.98	.00	53.53	6.83
MEAN	.000	.000	.000	.000	.000	17.7	2.86	3.49	1.33	.000	1.73	.23
MAX	.00	.00	.00	.00	.00	120	15	41	5.5	.00	18	.76
MIN	.00	.00	.00	.00	.00	.00	.21	.00	.01	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	1090	170	215	79	.00	106	14

CAL YR 1979 TOTAL 7831.88 MEAN 21.5 MAX 3900 MIN .00 AC-FT 15530
WTR YR 1980 TOTAL 824.52 MEAN 2.25 MAX 120 MIN .00 AC-FT 1640

06342500 MISSOURI RIVER AT BISMARCK, ND

LOCATION.--Lat 46°48'51", long 100°49'12", in SE¼NW¼SE¼ sec.3', T.139 N., R.80 W., Burleigh County, Hydrologic Unit 10130101, on left bank 40 ft (12 m) upstream from Bismarck city waterplant, 2,100 ft (640 m) downstream from Burlington Northern Railway bridge, 1.6 mi (2.6 km) northwest of Bismarck Post Office, 3.5 mi (5.6 km) upstream from Heart River, and at mile 1,314.5 (2,115.0 km).

DRAINAGE AREA.--186,400 mi² (482,800 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October to November 1927, April 1928 to current year. See WSP 1729 or 1917 for history of data prior to April 1928.

GAGE.--Water-stage recorder. Datum of gage is 1,618.28 ft (493.252 m), revised, National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to Sept. 30, 1937.

REMARKS.--Records good. Many diversions from tributaries. Flow regulated by Lake Sakakawea (station 06338000) 75.4 mi (121.3 km) upstream since November 1953.

AVERAGE DISCHARGE.--52 years (1928-80), 22,640 ft³/s (641.2 m³/s), 16,400,000 acre-ft/yr (20.2 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 500,000 ft³/s (14,200 m³/s) Apr. 6, 1952, gage height, 27.90 ft (8.504 m). Since completion of Garrison Dam in 1953, maximum discharge, 68,900 ft³/s (1,950 m³/s) July 13, 1975, gage height, 14.24 ft (4.340 m); maximum gage height, 14.58 ft (4.444 m) Dec. 18, 1979, backwater from ice. Minimum discharge, about 1,800 ft³/s (51.0 m³/s) Jan. 3, 1940; minimum gage height, 1.35 ft (0.411 m) Sept. 4, 1934, present site and datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 31.6 ft (9.632 m) Mar. 31, 1881 (ice jam), present site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 32,000 ft³/s (906 m³/s) July 22, gage height, 9.09 ft (2.771 m); maximum gage height, 14.58 ft (4.444 m) Dec. 18, backwater from ice; minimum discharge, 12,900 ft³/s (365 m³/s) Nov. 16, gage height, 3.97 ft (1.210 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18700	15000	14800	23000	29000	30500	24300	19600	20800	24600	25200	26300
2	19100	15300	15700	23500	29000	30000	23200	19300	20200	24500	24700	25100
3	18400	15000	15400	23500	29500	30000	22300	19400	20900	24400	25200	25100
4	18000	14800	14800	23000	30000	30000	22700	19500	22000	24800	25500	24600
5	18700	15100	16000	22500	30000	30000	21700	19700	23000	24600	25200	24700
6	17900	15200	16900	19000	29500	30000	22100	19200	23100	24300	25000	23800
7	17400	15300	16400	19000	30000	30000	21900	19200	22300	24500	25900	23900
8	17000	15300	18000	19000	30000	30000	22700	20000	22900	25700	26500	23400
9	17700	15600	19200	19000	30000	30500	22100	20300	22900	27600	26600	23600
10	17100	15400	17400	19000	29500	31000	22100	19700	21700	29100	27400	23300
11	16800	15200	19000	19000	29500	31000	22400	19100	21600	29800	25000	23100
12	16300	14900	23000	19000	29500	31000	22100	18200	21500	29600	24300	23600
13	16300	15200	26000	19000	29500	31000	22200	20300	22600	30800	23900	23600
14	16600	15200	25500	19000	29500	31000	22000	18900	21800	29700	24800	22900
15	16700	15100	25500	20000	29500	31000	22100	18300	21300	29700	24900	22800
16	16500	14000	25500	21000	29500	31000	22500	19100	20800	29600	25100	23400
17	16100	15000	25000	22000	29500	30500	21900	19000	23400	29200	25600	23300
18	16400	15200	22000	23000	30000	31000	22300	18800	21900	30400	24700	22800
19	16200	15300	21000	24000	30000	30500	22400	18900	21200	30000	26000	23700
20	16500	15700	21000	25500	30000	30000	22000	19200	21600	31300	26300	23700
21	16300	15300	20000	26000	30000	29500	21500	19300	22300	28700	26100	23900
22	16100	15700	20500	26500	30000	29000	21400	19500	21800	31200	25200	23500
23	16500	16300	21000	27000	30000	27500	22600	19400	22300	28700	25700	22900
24	16500	15100	21000	27000	30000	25500	21400	19300	22400	28400	25000	20600
25	15900	15700	21500	27500	30000	25000	21200	19700	23600	27600	25300	22900
26	15400	14800	22000	27000	30000	22900	21400	20500	23900	26200	25600	23200
27	15000	14400	22000	27000	30000	22800	21800	21100	23900	25700	25300	23800
28	15400	14900	22500	27000	30500	23200	22000	20700	24600	26500	24900	23000
29	14500	16000	23000	28000	30500	24100	21700	20600	24700	25400	25100	23500
30	14900	16500	23000	28500	---	24200	20600	21500	24400	25200	24400	24400
31	15200	---	23000	29000	---	23900	---	21300	---	25300	25600	---
TOTAL	516100	457500	637600	722500	864000	887600	662600	608600	671400	853100	786000	708400
MEAN	16650	15250	20570	23310	29790	28630	22090	19630	22380	27520	25350	23610
MAX	19100	16500	26000	29000	30500	31000	24300	21500	24700	31300	27400	26300
MIN	14500	14000	14800	19000	29000	22800	20600	18200	20200	24300	23900	20600
AC-FT	1024000	907500	1265000	1433000	1714000	1761000	1314000	1207000	1332000	1692000	1559000	1405000

CAL YR 1979 TOTAL 10055600 MEAN 27550 MAX 53300 MIN 14000 AC-FT 19950000
WTR YR 1980 TOTAL 8375400 MEAN 22880 MAX 31300 MIN 14000 AC-FT 16610000

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SEDIMENT RECORDS.--June 1946 to current year.

REMARKS.--Sediment records from June 1946 to September 1971 are available from Corps of Engineers, Omaha, NE. Sediment concentration data from Oct. 1, 1971 to June 30, 1972 were furnished by the Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS (July 1972 to current year): Maximum daily mean, about 1,000 mg/L Apr. 19, 1979; minimum daily mean, 14 mg/L Dec. 15-21, 1977.
SEDIMENT LOADS (July 1972 to current year): Maximum daily, 144,000 tons (131,000 metric tons) Apr. 19, 1979; minimum daily, 718 tons (651 metric tons) Dec. 16-18, 1977.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 230 mg/L Mar. 22, minimum daily mean, 30 mg/L Dec. 19-21, Jan. 9-14.
SEDIMENT LOADS: Maximum daily, 18,000 tons (16,300 metric tons) Mar. 22; minimum daily, 1,540 tons (1,400 metric tons) Jan. 9-14.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)
OCT											
16...	1125	E16500	--	--	--	12.0	--	--	--	--	--
24...	1145	E16500	740	8.5	8.0	9.5	4.0	10.0	93	16	K11
NOV											
19...	1200	E15300	735	8.3	4.5	6.5	2.7	11.4	94	10	K5
DEC											
04...	1400	E14800	--	--	--	3.5	--	--	--	--	--
19...	1130	E21000	820	8.5	7.5	.5	52	12.0	83	17	100
JAN											
21...	1130	E28000	780	8.3	.0	.5	.60	12.3	86	13	69
FEB											
12...	1400	E24500	--	--	--	.3	--	--	--	--	--
27...	1030	E30000	740	8.4	-8.5	.3	3.1	12.5	92	13	58
MAR											
20...	1215	E30000	735	8.4	.5	1.0	6.0	12.0	84	8	830
APR											
11...	1045	E22400	--	--	--	4.0	--	--	--	--	--
23...	1200	E22600	775	8.5	16.0	7.0	4.4	10.6	86	13	430
MAY											
21...	1215	E19500	800	8.2	28.5	10.5	--	10.3	92	64	K5
JUN											
12...	1455	E21500	--	--	--	16.5	--	--	--	--	--
25...	1100	E23600	760	8.4	25.0	15.5	12	9.1	90	9	100
JUL											
09...	1400	E27800	--	--	--	18.0	--	--	--	--	--
25...	1145	E27800	780	8.3	25.5	17.0	5.5	8.3	85	9	K50
AUG											
13...	1250	E23400	--	--	--	18.5	--	--	--	--	--
22...	1100	E25200	770	8.3	--	17.0	12	8.5	87	17	130
SEP											
24...	1215	E20600	770	8.5	14.0	14.5	5.0	--	--	10	K30

E - Estimated.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)
OCT											
16...	--	--	--	--	--	--	--	--	--	--	--
24...	K1	240	79	56	24	75	53	2.1	80	4.7	160
NOV											
19...	K4	230	84	54	24	76	54	2.2	80	4.0	150
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
19...	K14	230	77	53	23	71	53	2.1	76	4.9	150
JAN											
21...	K14	230	80	54	23	75	41	2.2	80	5.0	150
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
27...	K2	250	98	58	25	78	40	2.2	82	4.4	150
MAR											
20...	K5	220	75	50	22	70	41	2.1	75	4.6	140
APR											
11...	--	--	--	--	--	--	--	--	--	--	--
23...	<5	250	100	58	26	80	40	2.2	85	4.7	150
MAY											
21...	K3	260	97	60	26	77	39	2.1	80	2.7	160
JUN											
12...	--	--	--	--	--	--	--	--	--	--	--
25...	K20	250	72	58	26	79	40	2.2	84	4.6	180
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
25...	K2	240	84	58	24	76	40	2.1	81	4.7	160
AUG											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	68	250	100	59	25	74	39	2.0	79	4.5	150
SEP											
24...	K5	250	100	59	26	76	39	2.1	80	4.3	150

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, TOTAL (MG/L AS F) (00951)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
OCT											
16...	--	--	--	--	--	--	--	--	--	--	--
24...	220	9.8	.4	.5	6.6	514	493	.70	.41	.02	.43
NOV											
19...	260	9.8	--	.5	6.4	493	525	.67	--	--	.20
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
19...	200	9.8	--	.4	6.3	483	459	.66	--	--	.17
JAN											
21...	240	9.9	--	.4	6.3	520	504	.71	--	--	.15
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
27...	230	11	--	.5	6.5	508	504	.69	--	--	.18
MAR											
20...	230	9.6	--	.4	5.9	506	477	.69	--	--	.16
APR											
11...	--	--	--	--	--	--	--	--	--	--	--
23...	240	10	.6	.5	6.6	532	516	.72	.10	.01	.11
MAY											
21...	250	10	--	.5	7.3	544	530	.74	--	--	--
JUN											
12...	--	--	--	--	--	--	--	--	--	--	--
25...	230	10	.3	.6	6.6	522	525	.71	.14	.01	.15
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
25...	230	12	.5	.6	6.6	532	508	.72	.05	.01	.06
AUG											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	250	12	.5	.5	8.2	526	523	.72	.03	.01	.04
SEP											
24...	230	12	1.1	.5	6.4	548	505	.75	.02	.01	.03

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)
OCT											
16...	--	--	--	--	--	--	--	--	--	--	--
24...	.01	.01	.40	.41	.84	3.7	.020	0	5	400	0
NOV											
19...	.14	.17	.43	.57	.77	3.4	.040	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
19...	.01	.01	.42	--	.60	2.7	.010	--	--	--	--
JAN											
21...	.02	.02	.81	.83	.98	4.3	.030	--	--	--	--
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
27...	.08	.10	.22	.30	.48	2.1	.010	--	--	--	--
MAR											
20...	.00	.00	.46	.46	.62	2.7	.050	--	--	--	--
APR											
11...	--	--	--	--	--	--	--	--	--	--	--
23...	.01	.01	.52	.53	.64	2.8	.030	280	2	200	0
MAY											
21...	--	--	--	--	--	--	--	2200	2	100	0
JUN											
12...	--	--	--	--	--	--	--	--	--	--	--
25...	.01	.01	.62	.63	.78	3.5	.040	650	4	100	0
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
25...	.13	.16	.87	1.0	1.1	4.7	.030	670	4	100	0
AUG											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	.00	.00	1.8	1.8	1.8	8.1	.040	360	3	0	0
SEP											
24...	.00	.00	.48	.48	.51	2.3	.030	430	2	100	10

DATE	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	BORON, SUS-PENDED RECOV-ERABLE (UG/L AS B) (01021)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (0.037)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)
OCT										
24...	170	160	9	0	0	2	1	850	--	7
NOV										
14...	--	--	--	--	--	--	--	--	790	--
19...	--	--	120	--	--	--	--	--	--	--
DEC										
19...	--	--	110	--	--	--	--	--	--	--
JAN										
21...	--	--	120	--	--	--	--	--	--	--
FEB										
27...	--	--	120	--	--	--	--	--	--	--
MAR										
20...	--	--	120	--	--	--	--	--	--	--
APR										
23...	160	30	130	0	0	0	1	1600	--	8
MAY										
21...	160	0	170	0	0	0	8	1200	--	4
JUN										
25...	150	0	150	0	0	0	8	1800	--	5
JUL										
25...	180	40	140	0	10	0	7	2100	--	6
AUG										
22...	180	0	220	0	0	0	14	1500	--	11
SEP										
24...	140	30	110	0	10	1	10	910	--	12

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)
OCT									
24...	20	.0	0	6	1	0	10	3.5	.1
NOV									
14...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	15	.1
DEC									
19...	--	--	--	--	--	--	--	4.1	.3
JAN									
21...	--	--	--	--	--	--	--	13	.1
FEB									
27...	--	--	--	--	--	--	--	4.4	.0
MAR									
20...	--	--	--	--	--	--	--	4.9	.1
APR									
23...	40	.1	2	7	1	3	40	4.9	.2
MAY									
21...	30	.1	3	6	1	0	20	--	--
JUN									
25...	40	.1	0	7	1	0	10	6.5	.2
JUL									
25...	50	.1	4	5	1	9	20	6.2	.4
AUG									
22...	50	.1	2	4	1	0	30	4.9	--
SEP									
24...	30	.1	4	7	1	0	30	5.4	.4

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)
OCT							
16...	--	67	--	--	--	--	1
24...	390	58	--	--	--	--	--
NOV							
19...	630	64	--	--	--	--	--
DEC							
04...	--	84	17	64	100	--	1
19...	1000	--	--	--	--	--	--
JAN							
21...	300	46	--	--	--	--	--
FEB							
12...	--	56	--	--	--	--	1
27...	140	74	--	--	--	--	--
MAR							
20...	100	208	--	--	--	--	--
APR							
11...	--	168	11	49	99	100	--
23...	480	138	16	44	95	100	0
MAY							
21...	450	124	--	--	--	--	--
JUN							
12...	--	164	--	--	--	--	1
25...	170	142	--	--	--	--	--
JUL							
09...	--	170	17	57	100	--	0
25...	78	167	--	--	--	--	--
AUG							
13...	--	135	16	50	99	100	1
22...	1200	134	--	--	--	--	--
SEP							
24...	220	84	--	--	--	--	--

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)
OCT							
16...	5	61	96	97	98	100	--
24...	--	--	--	--	--	--	--
NOV							
19...	--	--	--	--	--	--	--
DEC							
04...	5	47	85	94	98	99	100
19...	--	--	--	--	--	--	--
JAN							
21...	--	--	--	--	--	--	--
FEB							
12...	10	79	100	--	--	--	--
27...	--	--	--	--	--	--	--
MAR							
20...	--	--	--	--	--	--	--
APR							
11...	--	--	--	--	--	--	--
23...	5	75	96	98	98	99	100
MAY							
21...	--	--	--	--	--	--	--
JUN							
12...	5	78	97	98	98	99	100
25...	--	--	--	--	--	--	--
JUL							
09...	3	82	99	100	--	--	--
25...	--	--	--	--	--	--	--
AUG							
13...	4	75	95	99	99	100	--
22...	--	--	--	--	--	--	--
SEP							
24...	--	--	--	--	--	--	--

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	OCT 24,79 1145	NOV 19,79 1200	DEC 19,79 1130	JAN 21,80 1130	FEB 27,80 1030	MAR 20,80 1215
TOTAL CELLS/ML	340	630	1000	300	140	100
DIVERSITY: DIVISION	1.3	1.0	0.1	0.4	0.2	1.0
.CLASS	1.3	1.0	0.1	0.4	0.2	1.0
..ORDER	2.0	1.6	0.5	0.4	1.1	1.0
...FAMILY	2.5	0.0	0.5	0.6	2.3	1.3
....GENUS	2.5	0.0	0.6	0.6	2.6	1.3

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	--	-	5	1	5	2	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	65#	63
....OOCYSTIS	52	13	--	-	5	1	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	--	-	55	9	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	55	9	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	5	4	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	90#	23	230#	37	--	-	--	-	45#	32	--	-
....MELOSIRA	--	-	140#	22	76	8	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	14	2	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....AMPHORA	--	-	14	2	--	-	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-	--	-	15	11	--	-
...DIATOMACEAE												
....DIATOMA	--	-	14	2	--	-	--	-	10	7	13	13
...FRAGILARIACEAE												
....ASTERIONELLA	--	-	--	-	--	-	--	-	20	14	26#	25
....FRAGILARIA	120#	30	14	2	910#	90	270#	90	30#	21	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	14	2	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	--	-	27	4	10	1	--	-	5	4	--	-
...NITZSCHIACEAE												
....NITZSCHIA	64#	17	27	4	--	-	15	5	10	7	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	26	7	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	13	3	--	-	--	-	5	2	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	26	7	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUTREPTIA	--	-	--	-	--	-	5	2	--	-	--	-
....TRACHELOMONAS	--	-	14	2	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES	--	-	14	2	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
      * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 23,80		MAY 21,80		JUN 25,80		JUL 25,80		AUG 22,80		SEP 24,80	
TIME	1200		1215		1100		1145		1100		1215	
TOTAL CELLS/ML	480		450		170		78		1200		220	
DIVERSITY: DIVISION	0.3		1.0		1.1		0.0		1.8		0.9	
.CLASS	0.3		1.0		1.1		0.0		1.8		0.9	
..ORDER	1.0		1.0		1.8		1.0		2.3		0.9	
...FAMILY	1.5		1.0		2.3		1.0		2.7		1.3	
....GENUS	1.6		1.8		2.3		1.0		2.8		1.4	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	13	1	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	--	-	13	8	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	13	1	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	26	2	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	--	-	--	-	26#	15	--	-	--	-	150#	71
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	65	6	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	13	3	--	-	--	-	39	3	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	26	5	--	-	39#	23	39#	50	39	3	--	-
....MELOSIRA	--	-	--	-	--	-	--	-	26	2	--	-
....STEPHANODISCUS	65	14	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	13	8	--	-	13	1	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	26	2	--	-
...CYMBELLACEAE												
....AMPHORA	--	-	--	-	--	-	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	13	3	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....ASTERIONELLA	320#	68	220#	49	64#	38	--	-	--	-	--	-
....FRAGILARIA	--	-	130#	29	--	-	--	-	--	-	26	12
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	13	6
...GOMPHONEMATACEAE												
....GOMPHONEMA	13	3	--	-	--	-	--	-	13	1	--	-
...NAVICULACEAE												
....NAVICULA	--	-	--	-	--	-	--	-	--	-	13	6
...NITZSCHIACEAE												
....NITZSCHIA	13	3	--	-	--	-	39#	50	52	4	13	6
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	13	3	--	-	--	-	78	7	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	26	5	--	-	--	-	--	-	170	14	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	77#	17	13	8	--	-	52	4	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	550#	47	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUTREPTIA	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342850 NORWEGIAN CREEK NEAR BELFIELD, ND

LOCATION.--Lat 46°51'12", long 103°08'51", in NW¼NW¼SW¼ sec.14, T.139 N., R.99 W., Stark County, Hydrologic Unit 10130202, on left bank 60 ft (18 m) downstream from bridge on township road, 3.4 mi (5.5 km) southeast of Belfield, and 5.4 mi (8.7 km) upstream from mouth.

DRAINAGE AREA.--39.8 mi² (103 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,550 ft (777 m), from topographic map.

REMARKS.--Records good except those for March, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 180 ft³/s (5.10 m³/s) Apr. 9, 1979, gage height, 7.14 ft (2.176 m), backwater from ice; maximum gage height, 8.6 ft (2.62 m) Mar. 25, 1979, from floodmark, backwater from ice; no flow for many months each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20 ft³/s (0.57 m³/s) Mar. 16, gage height, 3.15 ft (0.960 m), no peak above base of 30 ft³s (0.85 m³/s); maximum gage height, 3.96 ft (1.207 m) Feb. 27, backwater from ice; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.03	.86	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.06	.72	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.03	.49	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.01	.40	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.01	.76	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.01	.93	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.01	.29	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.02	.20	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.02	.16	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.01	.16	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.03	.10	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.10	.08	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.20	.04	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.50	.04	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	5.0	.03	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	18	.04	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	15	.04	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	7.7	.04	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	7.0	.03	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	6.2	.03	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	5.5	.03	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	4.4	.03	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	3.1	.03	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	2.3	.03	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	1.7	.02	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	1.5	.02	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.08	1.3	.02	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.05	1.2	.02	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.02	1.1	.01	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	1.0	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.95	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.15	83.99	5.65	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.005	2.71	.19	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.08	18	.93	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.3	167	11	.00	.00	.00	.00	.00

CAL YR 1979 TOTAL 2004.91 MEAN 5.49 MAX 146 MIN .00 AC-FT 3980
WTR YR 1980 TOTAL 89.79 MEAN .25 MAX 18 MIN .00 AC-FT 178

06342850 NORWEGIAN CREEK NEAR BELFIELD, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
MAR 19...	0915	4.0	1210	7.6	3.0	.0	10.9	83	K23	800	190	88
APR 07...	1600	.23	2020	8.2	4.0	3.0	[illegible]	101	K1	120	320	130

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
MAR 19...	34	25	190	67	6.0	10	124	0	102	5.0	480	5.2
APR 07...	57	42	360	71	8.8	6.6	234	0	192	2.4	850	3.6

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
MAR 19...	.1	5.5	860	814	1.17	9.29	.28	.30	.50	.61	1.9	2.4
APR 07...	.2	5.3	1460	1440	1.99	.91	.01	.03	.35	.42	1.3	1.6

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
MAR 19...	2.7	12	.290	.89	.210	50	2	0	9	100	60
APR 07...	1.6	7.1	.220	.67	.060	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342850 NORWEGIAN CREEK NEAR BELFIELD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
MAR 19...	40	200	0	0	<1	1	140	10	0	10	10
APR 07...	--	--	--	--	--	--	810	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
MAR 19...	3	0	<3	20	5	0	<10	16	250	10	0
APR 07...	--	--	--	--	--	--	--	--	160	--	--

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
MAR 19...	22	530	20	510	.1	.1	.0	.36	3	0	<10
APR 07...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
MAR 19...	0	6	6	0	20	0	0	0	0	390	<6.0
APR 07...	--	--	--	--	--	--	--	--	--	--	--

06342850 NORWEGIAN CREEK NEAR BELFIELD, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
MAR 19...	20	10	6	54	<11	1.5	12
APR 07...	--	--	--	--	--	--	--

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR 19...	1.0	13	1.1	31	2.0	32	.35
APR 07...	--	--	--	32	--	53	.03

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO APRIL 1980

DATE	MAR 19,80	APR 7,80
TIME	0915	1600
TOTAL CELLS/ML	57000	9200
DIVERSITY: DIVISION	0.2	0.7
.CLASS	0.2	0.7
..ORDER	0.2	1.4
...FAMILY	0.2	1.4
....GENUS	0.2	1.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)				
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...OOCYSTACEAE				
....ANKISTRODESMUS	1000	2	1600#	16
....DICTYOSPHAERIUM	--	-	86	1
..VOLVOCALES				
...CHLAMYDOMONAD'CEAE				
....CHLAMYDOMONAS	*	0	6300#	68
CHRYSOPHYTA				
.BACILLARIOPHYCEAE				
..CENTRALES				
...COSCINODISCACEAE				
....CYCLOTELLA	*	0	600	7
CYANOPHYTA (BLUE-GREEN ALGAE)				
.CYANOPHYCEAE				
..CHROOCOCCALES				
...CHROOCOCCACEAE				
....COCCOCHLORIS	--	-	170	2
..HORMOGONALES				
...OSCILLATORIACEAE				
....OSCILLATORIA	55000#	97	430	5
....SPIRULINA	340	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342900 SOUTH BRANCH HEART RIVER NEAR SOUTH HEART, ND

LOCATION.--Lat 46°50'24", long 103°01'12", in NE¼NE¼SE¼ sec.22, T.139 N., R.98 W., Stark County, Hydrologic Unit 10130202, on left bank 20 ft (6.1 m) upstream from bridge on county road, 4.1 mi (6.6 km) upstream from mouth and 2.1 mi (3.4 km) southwest of South Heart.

DRAINAGE AREA.--132 mi² (342 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,480 ft (756 m), from topographic map. Prior to October 1979 at datum 10.0 ft (3.05 m) higher.

REMARKS.--Records fair except those for March, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 520 ft³/s (14.7 m³/s) Apr. 10, 1979, gage height, 9.14 ft (2.786 m); no flow for long periods each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31 ft³/s (0.88 m³/s) Mar. 21, gage height, 12.61 ft (3.844 m), no peak above base of 100 ft³/s (2.83 m³/s); maximum gage height, 12.96 ft (3.950 m) Mar. 17, backwater from ice; no flow for many months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.09	2.8	.00	.00	.00	.00	7.8
2	.00	.00	.00	.00	.00	.04	2.3	.00	.00	.00	.00	.95
3	.00	.00	.00	.00	.00	.07	2.1	.00	.00	.00	.00	.32
4	.00	.00	.00	.00	.00	.10	2.0	.00	.00	1.8	.00	.17
5	.00	.00	.00	.00	.00	.06	1.6	.00	.00	1.7	.00	.07
6	.00	.00	.00	.00	.00	.02	1.4	.00	.00	.45	.00	.04
7	.00	.00	.00	.00	.00	.02	1.3	.00	.00	.10	.00	.03
8	.00	.00	.00	.00	.00	.02	1.4	.00	.00	.02	.00	.01
9	.00	.00	.00	.00	.00	.04	1.1	.00	.00	.01	.00	.01
10	.00	.00	.00	.00	.00	.10	.98	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.12	.83	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.10	.60	.00	.50	.00	.00	.00
13	.00	.00	.00	.00	.00	.06	.54	.00	2.6	.00	.00	.00
14	.00	.00	.00	.00	.00	1.0	.60	.00	1.9	.00	.00	.00
15	.00	.00	.00	.00	.00	2.0	.64	.00	.86	.00	.00	.00
16	.00	.00	.00	.00	.00	5.4	.54	.00	.26	.00	.00	.00
17	.00	.00	.00	.00	.00	8.1	.36	.00	.08	.00	6.3	.00
18	.00	.00	.00	.00	.00	9.9	.29	.00	.03	.00	2.8	.00
19	.00	.00	.00	.00	.00	12	.14	.00	.00	.00	.60	.00
20	.00	.00	.00	.00	.00	17	.12	.00	.00	.00	.14	.00
21	.00	.00	.00	.00	.00	21	.10	.00	.00	.00	1.5	.00
22	.00	.00	.00	.00	.00	16	.09	.00	.00	.00	.20	.00
23	.00	.00	.00	.00	.00	13	.06	.00	.00	.00	.06	.00
24	.00	.00	.00	.00	.00	12	.05	.00	.00	.00	.02	.00
25	.00	.00	.00	.00	.00	10	.04	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	9.4	.04	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	8.3	.02	.00	.00	.00	.00	.64
28	.00	.00	.00	.00	.10	7.6	.00	.00	.00	.00	.00	.40
29	.00	.00	.00	.00	.12	6.3	.00	.00	.00	.00	.00	.17
30	.00	.00	.00	.00	---	4.3	.00	.00	.00	.00	.00	.12
31	.00	---	.00	.00	---	3.7	---	.00	---	.00	1.7	---
TOTAL	.00	.00	.00	.00	.22	167.84	22.04	.00	6.23	4.08	13.32	10.73
MEAN	.000	.000	.000	.000	.008	5.41	.73	.000	.21	.13	.43	.36
MAX	.00	.00	.00	.00	.12	21	2.8	.00	2.6	1.8	6.3	7.8
MIN	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.4	333	44	.00	12	8.1	26	21

CAL YR 1979 TOTAL 6247.61 MEAN 17.1 MAX 492 MIN .00 AC-FT 12390
WTR YR 1980 TOTAL 224.46 MEAN .61 MAX 21 MIN .00 AC-FT 445

06342900 SOUTH BRANCH HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
MAR 18...	1000	5.7	572	7.6	10.0	.0	11.3	85	K23	1900	91	0
APR 08...	1150	1.4	1100	8.1	3.5	3.0	11.6	94	K4	79	110	0
JUL 08...	1415	.02	1520	8.4	23.5	18.5	4.5	52	530	1000	76	0
AUG 21...	1150	1.6	--	--	16.0	21.0	--	--	--	--	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
MAR 18...	21	9.3	78	62	3.9	12	115	0	94	4.6	170	4.2
APR 08...	25	12	190	77	7.8	7.0	220	0	180	2.8	350	4.7
JUL 08...	--	5.6	310	89	17	8.0	340	4	286	2.2	460	4.1

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
MAR 18...	.1	6.3	398	360	.54	6.13	.28	.28	.38	.46	2.6	3.0
APR 08...	.2	7.1	712	705	.97	2.69	.01	.01	.15	.18	1.2	1.3
JUL 08...	.8	16	1020	998	1.39	.06	.00	.00	.06	.07	2.6	2.7

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
MAR 18...	3.2	14	.660	2.0	.520	40	5	0	14	200	100
APR 08...	1.3	5.8	.210	.64	.110	--	--	--	--	--	--
JUL 08...	2.7	12	.270	.83	.150	10	26	0	10	100	0

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
MAR 18...	70	230	0	0	<1	1	140	0	0	0	0
APR 08...	--	--	--	--	--	--	280	--	--	--	--
JUL 08...	100	2400	0	--	<1	1	280	10	0	10	10

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342900 SOUTH BRANCH HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CU) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM SUSPENDED RECOVERABLE (UG/L AS LI) (01131)
MAR 18...	3	0	<3	10	9	0	<10	23	180	10	1
APR 08...	--	--	--	--	--	--	--	--	[illegible]	--	--
JUL 08...	1	--	<3	20	5	--	<10	15	66	20	7

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, SUSPENDED RECOV. (UG/L AS MO) (01061)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)
MAR 18...	9	250	20	230	.2	.1	.1	.03	1	0	<10
APR 08...	--	--	--	--	--	--	--	--	--	--	--
JUL 08...	<10	120	120	5	.1	.0	.1	.03	2	--	<10

DATE	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
MAR 18...	0	10	10	0	10	0	0	0	0	170	<6.0
APR 08...	--	--	--	--	--	--	--	--	--	--	--
JUL 08...	0	3	0	4	20	1	0	1	0	200	15

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)
MAR 18...	20	10	10	38	<6.0	10	11
APR 08...	--	--	--	--	--	--	--
JUL 08...	10	--	<3	30	18	1.9	8.1

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
MAR 18...	5.5	11	5.7	27	1.0	195	3.0
APR 08...	--	--	--	20	1.2	49	.19
JUL 08...	2.6	7.9	2.5	18	1.3	18	.00
AUG 21...	--	--	--	--	--	18000	78

06342900 SOUTH BRANCH HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAR										
18...	32	37	40	42	44	54	73	83	96	100

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO JULY 1980

DATE	APR 8,80		JUL 8,80	
TIME	1150		1415	
TOTAL CELLS/ML	18000		14000	
DIVERSITY: DIVISION	0.2		0.7	
.CLASS	0.2		0.7	
..ORDER	1.2		0.9	
...FAMILY	1.2		1.7	
....GENUS	1.3		2.1	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)				
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...CHARACIACEAE				
....SCHROEDERIA	--	-	*	0
...OOCYSTACEAE				
....ANKISTRODESMUS	8100#	44	250	2
....DICTYOSPHAERIUM	--	-	120	1
....KIRCHNERIELLA	280	2	--	-
...SCENEDESMACEAE				
....ACTINASTRUM	--	-	270	2
....SCENEDESMUS	--	-	*	0
..VOLVOCALES				
...CHLAMYDOMONADACEAE				
....CHLAMYDOMONAS	9400#	51	*	0
CHRYSOPHYTA				
.BACILLARIOPHYCEAE				
..CENTRALES				
...COSCINODISCACEAE				
....CYCLOTELLA	--	-	370	3
..PENNALES				
...FRAGILARIACEAE				
....SYNEDRA	--	-	*	0
...NAVICULACEAE				
....NAVICULA	--	-	*	0
...NITZSCHIACEAE				
....NITZSCHIA	--	-	250	2
...SURIRELLACEAE				
....SURIRELLA	--	-	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)				
.CYANOPHYCEAE				
..CHROOCOCCALES				
...CHROOCOCCACEAE				
....ANACYSTIS	--	-	180	1
..HORMOGONALES				
...NOSTOCACEAE				
....ANABAENA	--	-	1000	7
....ANABAENOPSIS	--	-	7600#	53
...OSCILLATORIACEAE				
....OSCILLATORIA	--	-	3700#	26
EUGLENOPHYTA (EUGLENOIDS)				
.EUGLENOPHYCEAE				
..EUGLENALES				
...EUGLENACEAE				
....EUGLENA	--	-	350	2
....TRACHELOMONAS	550	3	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06342970 NORTH CREEK NEAR SOUTH HEART, ND

LOCATION.--Lat 46°53'44", long 102°59'55", in SE¼NE¼SE¼ sec.35, T.140 N., R.98 W., Stark County, Hydrologic Unit 10130202, on left bank 120 ft (36 m) downstream from culvert on county road, 5.4 mi (8.7 km) upstream from mouth and 2.2 mi (3.5 km) north of South Heart.

DRAINAGE AREA.--40.8 mi^2 (106 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,470 ft (753 m), from topographic map.

REMARKS.--Records fair except those for March and April, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 260 ft^3/s (7.36 m^3/s) Apr. 16, 1979, gage height, 7.36 ft (2.243 m); maximum gage height, 8.8 ft (2.68 m) from floodmark, Mar. 25, 1979, backwater from ice; no flow for long periods each year.

EXTRE[illegible] FOR CURRENT YEAR.--Maximum discharge, 82 ft^3/s (2.32 m^3/s) June 16, gage height, 3.47 ft (1.058 m), only peak above base of 40 ft^3/s (1.13 m^3/s); no flow much of the time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.04	.01	.00	.00	.00	.42	.05	.00	.00	.00	.00
2	.00	.04	.01	.00	.00	.00	.38	.05	.00	.00	.00	.00
3	.00	.04	.02	.00	.00	.00	.35	.04	.00	.00	.00	.00
4	.00	.05	.03	.00	.00	.00	.32	.04	.00	.00	.00	.00
5	.00	.05	.02	.00	.00	.00	.30	.03	.00	.00	.00	.00
6	.00	.05	.02	.00	.00	.00	.27	.02	.00	.00	.00	.00
7	.00	.05	.02	.00	.00	.00	.25	.02	.00	.00	.00	.00
8	.00	.04	.02	.00	.00	.00	.23	.01	.00	.00	.00	.00
9	.00	.04	.03	.00	.00	.00	.22	.09	.00	.00	.00	.00
10	.00	.04	.02	.00	.00	.00	.21	.07	.00	.00	.00	.00
11	.00	.04	.01	.00	.00	.01	.20	.05	.00	.00	.00	.00
12	.00	.05	.00	.00	.00	.01	.19	.04	.00	.00	.00	.00
13	.01	.05	.00	.00	.00	.03	.18	.02	.00	.00	.00	.00
14	.02	.06	.00	.00	.00	.05	.18	.01	.00	.00	.00	.00
15	.02	.07	.00	.00	.00	.08	.17	.00	1.8	.00	.00	.00
16	.01	.06	.00	.00	.00	.10	.16	.00	53	.00	.00	.00
17	.01	.06	.00	.00	.00	.13	.15	.00	16	.00	.00	.00
18	.02	.07	.00	.00	.00	2.0	.14	.00	4.2	.00	.00	.00
19	.02	.07	.00	.00	.00	2.5	.14	.00	.75	.00	.00	.00
20	.02	.06	.00	.00	.00	2.1	.13	.00	.24	.00	.00	.00
21	.01	.06	.00	.00	.00	1.8	.12	.00	.10	.00	.00	.00
22	.01	.04	.00	.00	.00	1.5	.12	.00	.07	.00	.00	.00
23	.02	.05	.00	.00	.00	1.2	.11	.00	.04	.00	.00	.00
24	.02	.04	.00	.00	.00	1.0	.10	.00	.00	.00	.00	.00
25	.03	.03	.00	.00	.00	.90	.10	.00	.00	.00	.00	.00
26	.03	.03	.00	.00	.00	.80	.09	.00	.00	.00	.00	.00
27	.03	.04	.00	.00	.00	.70	.08	.00	.00	.00	.00	.00
28	.04	.03	.00	.00	.00	.64	.08	.00	.00	.00	.00	.00
29	.04	.02	.00	.00	.00	.58	.07	.00	.00	.00	.00	.00
30	.04	.01	.00	.00	---	.52	.06	.00	.00	.00	.00	.00
31	.04	---	.00	.00	---	.47	---	.00	---	.00	.00	---
TOTAL	.44	1.38	.21	.00	.00	17.12	5.52	.54	76.20	.00	.00	.00
MEAN	.014	.046	.007	.000	.000	.55	.18	.017	2.54	.000	.000	.000
MAX	.04	.07	.03	.00	.00	2.5	.42	.09	53	.00	.00	.00
MIN	.00	.01	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00
AC-FT	.9	2.7	.4	.00	.00	34	11	1.1	151	.00	.00	.00

CAL YR 1979 TOTAL 2101.40 MEAN 5.76 MAX 220 MIN .00 AC-FT 4170
WTR YR 1980 TOTAL 101.41 MEAN .28 MAX 53 MIN .00 AC-FT 201

06342970 NORTH CREEK NEAR SOUTH HEART, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
NOV 15...	1345	.07	3740	8.6	13.0	5.0	10.2	82	K3	46	290	0
DEC 05...	0935	.02	4740	8.6	1.5	.5	9.9	76	K1	140	320	0
MAR 21...	1230	1.8	1190	7.8	6.0	.5	9.9	75	K1	3200	120	0
APR 08...	1515	.23	1430	8.5	3.5	3.0	13.3	106	<2	76	100	0
JUN 24...	0755	.01	--	--	19.0	15.0	--	--	--	--	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 15...	44	43	880	86	23	14	942	34	828	4.1	1400	9.3
DEC 05...	44	50	1100	95	27	15	1240	29	1070	5.2	1600	9.7
MAR 21...	22	16	200	76	8.9	11	234	0	192	5.9	360	7.7
APR 08...	16	15	280	85	12	5.1	296	4	249	1.5	460	3.1
JUN 24...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
NOV 15...	.5	.5	2730	2890	3.71	.52	.07	.02	.02	.02	2.2	2.2
DEC 05...	.6	.8	3460	3460	4.71	.19	.11	.01	.02	.02	1.9	1.9
MAR 21...	.1	8.5	821	743	1.12	3.99	.28	.32	.47	.57	2.1	2.6
APR 08...	.2	4.5	900	934	1.22	.56	.00	.00	.08	.10	1.2	1.3
JUN 24...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)
NOV 15...	2.3	10	.110	.34	.060	--	--	--	--	--	--
DEC 05...	2.0	8.9	.100	.31	.050	--	--	--	--	--	--
MAR 21...	2.9	13	.380	1.2	.300	40	3	0	100	50	50
APR 08...	1.3	5.8	.200	.61	.070	--	--	--	--	--	--
JUN 24...	--	--	--	--	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06342970 NORTH CREEK NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, SUSPENDED RECOV. (UG/L AS BE) (01011)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)
NOV 15...	--	--	--	1400	--	--	--	--	--	--	--
DEC 05...	--	--	--	1600	--	--	--	--	--	--	--
MAR 21...	0	0	<1	410	20	10	3	0	<3	7	0
APR 08...	--	--	--	510	--	--	--	--	--	--	--
JUN 24...	--	--	--	--	--	--	--	--	--	--	--

DATE	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM SUSPENDED RECOVERABLE (UG/L AS LI) (01131)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)
NOV 15...	--	70	--	--	--	--	--	--	--	--	--
DEC 05...	--	120	--	--	--	--	--	--	--	--	--
MAR 21...	<10	340	10	0	11	260	10	250	.1	.1	.0
APR 08...	--	150	--	--	--	--	--	--	--	--	--
JUN 24...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, SUSPENDED RECOV. (UG/L AS MO) (01061)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
NOV 15...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
MAR 21...	1	0	<10	6	6	0	0	0	0	280	<6.0

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
NOV 15...	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--
MAR 21...	20	10	8	<11	1.2	12	1.2

DATE	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
NOV 15...	--	--	37	.8	11	.00
DEC 05...	--	--	42	.5	129	.01
MAR 21...	12	1.2	23	.8	47	.23
APR 08...	--	--	23	1.5	36	.02
JUN 24...	--	--	--	--	260	.01

06342970 NORTH CREEK NEAR SOUTH HEART, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO APRIL 1980

DATE	NOV 15,79	DEC 5,79	MAR 21,80	APR 8,80
TIME	1345	0935	1230	1515
TOTAL CELLS/ML	40000	23000	9500	9700
DIVERSITY: DIVISION	1.1	1.6	0.2	1.5
.CLASS	1.1	1.8	0.2	1.5
..ORDER	1.8	2.0	1.2	2.1
...FAMILY	1.8	2.0	1.3	2.2
....GENUS	2.1	2.2	1.4	0.0

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	*	0	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	--	-	70	1
....MICRACTINIUM	--	-	120	1	--	-	70	1
...OOCYSTACEAE								
....ANKISTRODESMUS	4000	10	4300#	19	110	1	1900#	20
....KIRCHNERIELLA	1200	3	250	1	*	0	--	-
....NEPHROCYTIUM	400	1	--	-	--	-	--	-
....OOCYSTIS	530	1	500	2	--	-	--	-
....TREUBARIA	*	0	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	530	1	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	530	1	740	3	110	1	4200#	43
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE	--	-	--	-	--	-	1100	11
....CYCLOTELLA	*	0	3500	15	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...CHROMULINACEAE								
....CHRYSOCOCCUS	*	0	2800	12	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	89	1	--	-
....ANACYSTIS	23000#	56	11000#	47	--	-	70	1
....COCCOCHLORIS	--	-	--	-	3800#	40	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	7300#	18	--	-	5200#	55	1900#	20
...RIVULARIACEAE								
....RAPHIDIOPSIS	--	-	--	-	130	1	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	2700	7	120	1	--	-	70	1
....TRACHELOMONAS	270	1	--	-	--	-	210	2
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	--	-	--	-	210	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06343000 HEART RIVER NEAR SOUTH HEART, ND

LOCATION.--Lat 46°51'56", long 102°56'53", in NE¼SE¼SW¼ sec.8, T.139 N., R.97 W., Stark County, Hydrologic Unit 10130202, on left bank 1.7 mi (2.7 km) downstream from North Creek, 2 mi (3.2 km) east of South Heart, and 5.5 mi (8.8 km) upstream from Edward Arthur Patterson Lake.

DRAINAGE AREA.--311 mi^2 (805 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1947 to September 1970, October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,429.45 ft (740.496 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except those for the winter period, which are poor.

AVERAGE DISCHARGE.--27 years, 28.6 ft^3/s (0.810 m^3/s), 20,720 acre-ft/yr (25.5 hm^3/yr); median of yearly mean discharges, 28 ft^3/s (0.79 m^3/s), 20,300 acre-ft/yr (25.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,080 ft^3/s (229 m^3/s) May 9, 1970, gage height, 22.77 ft (6.940 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 60 ft^3/s (1.70 m^3/s) Mar. 18, gage height, 4.72 ft (1.439 m), backwater from ice, no peak above base of 200 ft^3/s (5.66 m^3/s); maximum gage height, 4.85 ft (1.478 m) Mar. 17, backwater from ice; no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	1.2	.65	.50	.30	2.0	10	.68	.23	.00	.10	1.7
2	.23	1.2	.65	.45	.30	3.0	9.0	.65	.23	.05	.10	2.0
3	.30	1.2	.75	.40	.35	2.7	7.8	.69	.23	.05	.00	1.1
4	.68	1.2	.94	.40	.40	2.2	6.6	.72	.23	.05	.05	.65
5	.53	1.3	1.1	.35	.45	2.0	7.1	.76	.16	.05	.10	.56
6	.38	1.2	1.1	.30	.50	1.8	6.0	.88	.16	.05	.05	.49
7	.44	1.5	1.1	.20	.58	1.7	5.4	1.0	.16	.05	.00	.38
8	.38	1.2	.93	.25	.65	1.6	4.4	1.3	.16	.70	.00	.23
9	.38	1.1	.82	.30	.70	1.5	4.2	.94	.16	.05	.00	.10
10	.30	1.0	.88	.31	.75	1.4	3.6	.88	.10	.05	.10	.10
11	.30	1.0	.75	.35	.70	1.4	2.8	.82	.23	.05	.05	.10
12	.30	.94	.70	.40	.60	1.4	2.4	.76	.53	.10	.18	.10
13	.38	.94	.70	.40	.45	1.4	1.7	.76	.76	.10	.05	.10
14	.53	.88	.60	.40	.35	2.0	1.4	.71	1.1	.10	.05	.10
15	.56	.88	.60	.35	.40	5.0	1.7	.64	2.0	.10	.05	.10
16	.63	.88	.60	.30	.50	15	1.4	.65	1.7	.10	.53	.10
17	.68	.88	.55	.35	.55	40	1.0	.57	1.2	.10	.56	.10
18	.63	.88	.60	.40	.60	55	.90	.50	1.0	.10	.79	.16
19	.65	.82	.80	.40	.60	52	1.1	.45	.82	.44	1.6	.05
20	.56	.82	.75	.40	.65	46	1.0	.39	.68	.44	1.2	.10
21	.58	.82	.70	.45	.70	39	.89	.32	.56	.49	1.2	.10
22	1.0	.76	.65	.50	.70	31	.80	.30	.53	.49	2.4	.10
23	1.3	.76	.60	.55	.65	26	.67	.30	.44	.38	2.7	.10
24	1.2	.82	.50	.60	.65	21	.65	.30	.16	.10	2.2	.16
25	1.1	.76	.60	.60	.65	18	.64	.23	.05	.05	2.0	.05
26	1.1	.70	.65	.50	.70	15	.58	.23	.05	.05	1.9	.10
27	.97	.70	.70	.40	.80	16	.59	.66	.10	.00	1.8	.10
28	1.2	.68	.70	.35	1.2	14	.65	.23	.10	.00	1.6	.10
29	1.2	.65	.60	.30	1.0	13	.75	.23	.05	.00	1.4	.16
30	1.2	.65	.50	.33	---	14	.72	.23	.00	.05	1.4	.10
31	1.2	---	.50	.30	---	12	---	.23	---	.05	1.3	---
TOTAL	21.19	28.32	22.27	12.09	17.43	458.1	86.44	18.01	13.88	4.39	25.46	9.39
MEAN	.68	.94	.72	.39	.60	14.8	2.88	.58	.46	.14	.82	.31
MAX	1.3	1.5	1.1	.60	1.2	55	10	1.3	2.0	.70	2.7	2.0
MIN	.23	.65	.50	.20	.30	1.4	.58	.23	.00	.00	.00	.05
AC-FT	42	56	44	24	35	909	171	36	28	8.7	50	19

CAL YR 1979 TOTAL 12520.48 MEAN 34.3 MAX 900 MIN .16 AC-FT 24830
WTR YR 1980 TOTAL 716.97 MEAN 1.96 MAX 55 MIN .00 AC-FT 1420

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
02...	0915	.21	1900	8.4	12.0	9.0	7.4	71	65	190	94	0
NOV												
06...	1500	1.2	3690	8.6	4.0	2.0	14.2	109	K11	61	390	0
DEC												
06...	0930	.92	3780	8.3	4.0	.5	11.5	89	K12	62	370	0
JAN												
10...	1050	.31	3830	7.9	-17.0	.0	6.1	46	K13	K20	350	0
FEB												
07...	1105	.58	3700	7.9	-6.0	.0	5.7	42	K12	240	280	0
MAR												
19...	1500	52	938	7.7	3.5	.5	11.4	87	K28	1900	140	34
APR												
08...	0830	3.9	1400	8.1	1.0	.5	11.4	88	<2	50	150	0
MAY												
08...	0850	1.1	2240	8.5	9.0	10.0	7.9	77	180	170	210	0
27...	1345	.22	--	--	31.0	21.5	--	--	--	--	--	--
JUN												
04...	1500	.22	3180	8.4	29.0	21.5	8.3	104	--	--	290	0
JUL												
08...	0935	.04	2970	8.3	20.0	18.0	7.2	83	200	8000	170	0
AUG												
12...	0830	.05	2750	8.5	16.0	16.5	6.0	66	>2000	2700	120	0
21...	1000	.97	--	--	16.0	17.0	--	--	--	--	--	--
SEP												
09...	1420	.08	2500	8.7	21.0	20.5	9.1	108	96	170	130	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
02...	22	9.5	480	91	22	5.6	612	5	510	4.0	520	10
NOV												
06...	68	53	760	90	17	12	866	29	758	3.7	1200	29
DEC												
06...	62	53	820	91	18	12	1130	0	930	9.1	1100	47
JAN												
10...	59	48	900	93	21	8.7	1160	0	952	23	1200	38
FEB												
07...	51	38	800	86	21	8.3	1110	0	910	22	1000	34
MAR												
19...	27	18	140	66	5.7	13	129	0	106	4.1	360	5.3
APR												
08...	30	19	250	77	8.8	6.2	283	0	232	3.6	480	4.3
MAY												
08...	41	25	490	83	17	7.9	612	17	530	3.3	650	18
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
04...	57	36	680	83	17	10	843	6	701	5.4	970	34
JUL												
08...	30	22	650	89	25	8.6	869	0	712	7.0	810	22
AUG												
12...	23	15	650	92	26	6.7	873	19	748	4.6	750	16
21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	24	17	560	90	21	9.3	703	17	604	2.4	750	27

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
02...	.8	13	--	1370	1.86	.78	.01	--	.08	.10	.66	.74
NOV												
06...	1.0	9.5	2600	2590	3.54	8.42	.01	.00	.03	.04	1.1	1.1
DEC												
06...	1.6	14	2710	2670	3.69	6.73	.11	.07	.06	.07	1.5	1.6
JAN												
10...	1.4	19	2840	2850	3.86	2.38	.33	.33	.47	.57	1.2	1.7
FEB												
07...	1.1	25	2580	2510	3.51	4.04	.35	.31	.39	.47	1.0	1.4
MAR												
19...	.2	6.6	666	636	.91	93.5	.31	.34	.37	.45	2.1	2.5
APR												
08...	.3	6.0	903	936	1.23	9.51	.15	.15	.29	.35	.91	1.2
MAY												
08...	.7	5.1	1460	1560	1.99	4.38	.01	.01	.09	.11	.82	.91
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
04...	.2	12	2240	2220	3.05	1.33	.05	.02	.13	.16	1.1	1.2
JUL												
08...	1.4	8.3	2120	1980	2.88	. 3	.00	.01	.06	.07	1.4	1.5
AUG												
12...	1.8	6.9	1940	1920	2.64	.26	.00	.00	.32	.39	1.7	2.0
21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
09...	1.3	7.1	1700	1760	2.31	.37	.00	.00	.00	.00	1.7	1.7

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT											
02...	.75	3.3	.130	.40	.100	--	--	--	--	--	--
NOV											
06...	1.1	4.9	.110	.34	.060	--	--	--	--	--	--
DEC											
06...	1.7	7.6	.340	1.0	.210	--	--	--	--	--	--
JAN											
10...	2.0	9.0	.270	.83	.150	--	--	--	--	--	--
FEB											
07...	1.8	7.7	.200	.61	.110	--	--	--	--	--	--
MAR											
19...	2.8	12	.500	1.5	.350	30	3	1	17	200	100
APR											
08...	1.4	6.0	.220	.67	.100	--	--	--	--	--	--
MAY											
08...	.92	4.1	.110	.34	.060	30	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	1.3	5.5	.210	.64	.090	--	--	--	--	--	--
JUL											
08...	1.5	6.6	.200	.61	.130	50	8	0	210	100	10
AUG											
12...	2.0	8.9	.300	.92	.150	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	1.7	7.5	.330	1.0	.260	--	--	--	--	--	--

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT											
02...	--	--	--	--	--	--	570	--	--	--	--
NOV											
06...	--	--	--	--	--	--	1200	--	--	--	--
DEC											
06...	--	--	--	--	--	--	1100	--	--	--	--
JAN											
10...	--	--	--	--	--	--	1300	--	--	--	--
FEB											
07...	--	--	--	--	--	--	1200	--	--	--	--
MAR											
19...	60	120	0	0	<1	0	390	0	0	0	7
APR											
08...	--	--	--	--	--	--	410	--	--	--	--
MAY											
08...	70	--	--	--	<3	--	630	--	--	0	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	990	--	--	--	--
JUL											
08...	90	9000	10	--	<3	1	790	10	0	10	7
AUG											
12...	--	--	--	--	--	--	1100	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	790	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT											
02...	--	--	--	--	--	--	--	--	90	--	--
NOV											
06...	--	--	--	--	--	--	--	--	40	--	--
DEC											
06...	--	--	--	--	--	--	--	--	90	--	--
JAN											
10...	--	--	--	--	--	--	--	--	80	--	--
FEB											
07...	--	--	--	--	--	--	--	--	80	--	--
MAR											
19...	4	1	<3	0	9	0	<10	14	280	10	0
APR											
08...	--	--	--	--	--	--	--	--	70	--	--
MAY											
08...	--	--	<8	--	--	--	<25	--	83	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	--	--	60	--	--
JUL											
08...	2	--	<8	30	3	--	<25	10	270	60	10
AUG											
12...	--	--	--	--	--	--	35	--	220	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	29	--	130	--	--

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
MAR											
19...	15	360	90	270	.2	.1	.1	.05	0	0	<10
APR											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
08...	40	--	--	45	--	.0	--	--	--	--	<25
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	48	180	120	65	.0	.0	.0	.02	3	--	<25
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
MAR											
19...	4	7	4	3	20	0	0	0	0	250	<6.0
APR											
08...	--	--	--	--	--	--	--	--	--	--	--
MAY											
08...	--	--	--	4	--	--	--	0	--	580	<8.0
27...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
JUL											
08...	3	3	0	10	20	0	0	0	1	510	9.0
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
MAR							
19...	30	30	4	31	<9.9	7.0	14
APR							
08...	--	--	--	--	--	--	--
MAY							
08...	--	--	<8	--	--	--	--
27...	--	--	--	--	--	--	--
JUN							
04...	--	--	--	--	--	--	--
JUL							
08...	30	7	23	26	<32	6.7	<16
AUG							
12...	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--
SEP							
09...	--	--	--	--	--	--	--

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT							
02...	--	--	--	19	1.2	76	.04
NOV							
06...	--	--	--	--	--	78	.24
DEC							
06...	--	--	--	24	--	184	.46
JAN							
10...	--	--	--	33	--	191	.16
FEB							
07...	--	--	--	29	1.2	139	.22
MAR							
19...	5.3	14	5.4	35	2.0	183	26
APR							
08...	--	--	--	15	1.2	58	.57
MAY							
08...	--	--	--	30	1.1	80	.24
27...	--	--	--	--	--	139	.06
JUN							
04...	--	--	--	43	3.6	186	.11
JUL							
08...	4.2	<16	3.9	27	3.1	108	.01
AUG							
12...	--	--	--	44	1.2	140	.02
21...	--	--	--	--	--	117	.31
SEP							
09...	--	--	--	24	1.6	88	.02

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAR										
19...	7	12	19	26	31	37	49	66	86	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
OCT					
02...	26	16.1	1.60	2.76	3.39
AUG					
12...	35	6.46	.820	12.4	16.4
SEP					
09...	31	.920	.810	2.68	4.02

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	OCT 2,79 0915		NOV 6,79 1500		DEC 6,79 0930		JAN 10,80 1050		FEB 7,80 1105		MAR 19,80 1500	
TOTAL CELLS/ML	1600		33000		11000		240		190		280	
DIVERSITY: DIVISION	1.5		0.9		1.0		1.5		1.5		1.5	
.CLASS	1.5		1.3		1.5		1.5		1.5		1.5	
..ORDER	1.9		1.3		2.1		1.6		1.9		1.7	
...FAMILY	2.3		1.3		2.3		1.9		2.2		2.3	
....GENUS	2.5		1.4		2.6		2.0		2.2		2.3	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	15	6	--	-	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	260#	16	10000#	30	950	9	71#	29	56#	29	130#	45
....CHLORELLA	--	-	--	-	--	-	5	2	--	-	--	-
....CHODATELLA	13	1	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	300	1	190	2	--	-	--	-	--	-
....NEPHROCYTIUM	--	-	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	380	3	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	300	1	95	1	--	-	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	260#	16	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	100	6	--	-	850	8	--	-	--	-	20	7
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CARTERIA	--	-	--	-	190	2	--	-	--	-	--	-
....CHLAMYDOMONAS	90	6	--	-	3000#	28	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	65	4	20000#	60	3200#	29	30	13	81#	42	15	5
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....OPEPHORA	--	-	--	-	--	-	--	-	--	-	10	4
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	15	5
...NAVICULACEAE												
....DIPLONEIS	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	--	-	--	-	10	4	10	5	5	2
....NEIDIUM	--	-	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	670#	41	--	-	190	2	--	-	15	8	20	7
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	5	3	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	2700	8	1900#	17	--	-	--	-	--	-
...OCHROMONADACEAE												
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	160	9	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	66#	24
....ANABAENOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06343000 HEART PIVER NEAR SOUTH HEART, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	OCT 2,79		NOV 6,79		DEC 6,79		JAN 10,80		FEB 7,80		MAR 19,80	
TIME	0915		1500		0930		1050		1105		1500	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	26	2	--	-	--	-	110#	46	5	3	--	-
....LEPOCINCLIS	--	-	--	-	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	20	11	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 8,80		MAY 8,80		JUN 4,80		JUL 8,80		AUG 12,80		SEP 9,80	
TIME	0830		0850		1500		0935		0830		1420	
TOTAL CELLS/ML	14000		5500		29000		7700		34000		5800	
DIVERSITY: DIVISION	1.4		1.1		1.6		1.8		1.4		1.9	
.CLASS	1.4		1.1		1.6		1.8		1.4		1.9	
..ORDER	1.9		1.4		1.8		2.2		1.6		2.7	
...FAMILY	1.9		2.0		1.9		2.6		1.8		2.9	
....GENUS	2.0		3.0		2.4		3.1		2.0		3.2	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	79	1	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	3300#	24	2300#	43	12000#	43	1400#	18	2900	9	480	8
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	40	1	200	1	84	1	--	-	--	-
....DICTYOSPHAERIUM	260	2	790	14	600	2	--	-	970	3	--	-
....KIRCHNERIELLA	--	-	--	-	800	3	--	-	*	0	--	-
....NEPHROCYTIUM	--	-	40	1	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	79	1	--	-	170	2	*	0	37	1
....SELENASTRUM	--	-	--	-	--	-	42	1	--	-	--	-
....TREUBARIA	--	-	160	3	--	-	--	-	*	0	--	-
....WESTELLA	--	-	--	-	--	-	170	2	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	160	3	--	-	340	4	1500	4	630	11
....SCENEDESMUS	--	-	320	6	600	2	170	2	--	-	520	9
....TETRASTRUM	--	-	160	3	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CARTERIA	--	-	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	1300	9	120	2	400	1	--	-	*	0	590	10
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	990	7	--	-	1400	5	250	3	970	3	37	1
....MELOSIRA	--	-	--	-	200	1	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	42	1	*	0	--	-
...DIATOMACEAE												
....OPEPHORA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....DIPLONEIS	--	-	40	1	--	-	--	-	--	-	--	-
....NAVICULA	*	0	--	-	--	-	84	1	970	3	--	-
....NEIDIUM	--	-	--	-	--	-	--	-	*	0	--	-
...NITZSCHIACEAE												
....NITZSCHIA	--	-	240	4	1000	3	1600#	20	2000	6	330	6
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	*	0	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	120	2	--	-	--	-	--	-	--	-
...OCHROMONADACEAE												
....OCHROMONAS	*	0	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	200	1	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	460	3	400	7	9200#	32	460	6	--	-	1100#	18
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
....ANABAENOPSIS	--	-	--	-	--	-	250	3	--	-	--	-
...OSCILLATORIACEAE												
....LYNGBYA	--	-	160	3	--	-	--	-	--	-	--	-
....OSCILLATORIA	7100#	52	--	-	--	-	2400#	31	23000#	66	1000#	18

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06343000 HEART RIVER NEAR SOUTH HEART, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	APR 8,80		MAY 6,80		JUN 4,80		JUL 8,80		AUG 12,80		SEP 9,80	
TIME	0830		0850		1500		0935		0830		1420	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	120	2	800	3	170	2	430	1	300	5
....LEPOCINCLIS	--	-	--	-	600	2	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	84	1	320	1	--	-
....TRACHELOMONAS	*	0	120	2	200	1	42	1	*	0	190	3
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	200	1	--	-	--	-	--	-	540	2	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	42	1	--	-	590	10

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06343500 EDWARD ARTHUR PATTERSON LAKE NEAR DICKINSON, ND

LOCATION.--Lat 46°52'11", long 102°49'37", in NE¼NW¼SW¼ sec.8, T.139 N., R.96 W., Stark County, Hydrologic Unit 10130202, at left edge of spillway, and 2 mi (3 km) southwest of Dickinson.

DRAINAGE AREA.--400 mi^2 (1,040 km^2), approximately.

PERIOD OF RECORD.--May 1950 to current year. Prior to October 1958, published as Dickinson Reservoir near Dickinson.

GAGE.--Water-stage recorder. Datum of gage is 2,400.00 ft (731.520 m) National Geodetic Vertical Datum of 1929 (levels by Water and Power Resources Service); gage readings have been reduced to elevations NGVD. Prior to Jan. 4, 1961, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam; storage began May 23, 1950; dam completed Aug. 9, 1950. Total capacity is 24,600 acre-ft (30.3 hm^3) at maximum pool, elevation, 2,428.9 ft (740.329 m). Dead storage is 1,000 acre-ft (1.23 hm^3) below lowest point of outlet, elevation, 2,404.0 ft (732.739 m). Conservation storage is 5,600 acre-ft (6.90 hm^3) between elevation 2,404.0 ft (732.739 m) and 2,416.5 ft (736.549 m), crest of spillway. Figures given herein represent total contents based on capacity table dated Jan. 1, 1965. The reservoir is for flood control, irrigation and municipal supply.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 11,180 acre-ft (13.8 hm^3) May 9, 1970, elevation, 2,420.81 ft (737.863 m); minimum since initial filling of reservoir, 2,950 acre-ft (3.64 hm^3) Mar. 16, 1962, elevation, 2,410.41 ft (734.693 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents recorded, 6,060 acre-ft (7.47 hm^3) Apr. 9, elevation, 2,415.72 ft (736.311 m); minimum, 3,670 acre-ft (4.53 hm^3) Sept. 30, elevation 2,411.81 ft (735.120 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,414.43	5,170	—
Oct. 31	2,414.01	4,900	-270
Nov. 30	2,413.96*	4,870	-30
Dec. 31	2,413.94	4,860	-10
CAL YR 1979	--	—	-960
Jan. 31	2,413.81	4,780	-80
Feb. 29	2,413.72	4,730	-50
Mar. 31	2,415.57	5,950	+1,220
Apr. 30	2,415.40*	5,830	-120
May 31	2,414.34	5,110	-720
June 30	2,413.78	4,760	-350
July 31	2,412.67	4,120	-640
Aug. 31	2,412.28	3,910	-210
Sept. 30	2,411.81	3,670	-240
WTR YR 1980	--	--	-1,500

* - Estimate

06344600 GREEN RIVER NEAR NEW HRADEC, ND

LOCATION.--Lat 47°01'40", long 103°03'10", on line between secs.13 and 14, T.141 N., R.98 W., Billings County, Hydrologic Unit 10130202, on left bank below county highway bridge, and 8 mi (13 km) west of New Hradec.

DRAINAGE AREA.--152 mi² (394 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1964 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--16 years, 17.8 ft³/s (0.504 m³/s), 12,900 acre-ft/yr (15.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,120 ft³/s (117 m³/s) May 9, 1970, gage height, 16.88 ft (5.145 m); maximum gage height, 17.60 ft (5.364 m) Mar. 22, 1978, backwater from ice; no flow for several days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,270 ft³/s (36.0 m³/s) June 15, gage height, 13.33 ft (4.063 m), only peak above base of 100 ft³/s (2.83 m³/s); minimum daily discharge, 0.25 ft³/s (0.007 m³/s) Aug. 1-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.77	1.2	1.0	.90	1.0	3.0	8.7	1.4	.88	.64	.25	.98
2	.62	1.2	1.0	.90	1.0	8.0	8.0	1.4	.78	.60	.25	.89
3	.92	1.2	1.0	.80	1.0	5.0	6.4	1.4	.83	.60	.25	.86
4	1.0	1.2	1.1	.80	1.0	3.0	5.9	1.1	.83	.60	.25	.75
5	1.1	1.2	1.1	.80	1.1	3.5	5.4	1.1	.78	.60	.25	.73
6	1.3	1.2	1.1	.80	1.2	3.0	4.5	1.3	.68	.60	.25	.73
7	.65	1.1	1.1	.80	1.2	2.7	4.3	1.3	.73	.60	.25	.74
8	.70	1.1	1.1	.70	1.2	2.7	3.7	1.3	.73	.60	.25	.88
9	.76	1.1	1.1	.70	1.2	2.7	3.4	1.4	.68	.60	.30	.85
10	.81	1.1	1.1	.60	1.2	4.5	3.4	1.4	.70	.60	.40	.81
11	.86	1.1	1.0	.60	1.2	4.0	2.9	1.4	.65	.60	.35	.89
12	.88	1.0	.90	.60	1.1	4.0	2.7	1.4	.70	.50	.35	1.1
13	.95	.88	.90	.80	1.1	5.0	2.4	1.1	.80	.50	.35	1.2
14	1.0	.88	.90	1.0	1.0	4.5	2.3	1.2	.90	.45	.30	1.1
15	.98	1.1	.90	1.1	1.0	6.5	2.3	.1	515	.45	.30	1.0
16	1.1	1.1	.85	1.2	1.0	23	2.4	.98	277	.40	.50	1.0
17	1.1	1.2	.85	1.3	1.0	32	2.3	.88	25	.40	.60	1.0
18	1.2	1.2	.85	1.3	1.0	29	2.[illegible]	.88	12	.40	.65	1.0
19	1.2	1.1	.90	1.3	1.0	29	2.4	.83	5.9	.40	.65	.95
20	1.4	1.1	.90	1.3	1.0	26	2.1	.88	3.6	.45	.65	.90
21	1.4	1.0	.90	1.3	1.1	28	2.0	.93	2.3	.40	.64	1.0
22	1.3	1.2	.90	1.3	1.1	24	2.0	.98	1.7	.35	.59	.95
23	1.6	1.2	.90	1.3	1.1	20	1.9	.98	1.6	.30	.57	.90
24	1.4	1.2	.90	1.4	1.1	18	1.8	.93	1.4	.30	.56	.95
25	1.3	1.2	.90	1.4	1.1	16	1.9	.93	1.2	.30	.57	.95
26	1.4	1.1	.90	1.3	1.1	14	1.8	.98	1.0	.30	.60	.90
27	1.4	1.1	.90	1.2	1.5	12	1.7	.93	.90	.30	.60	.85
28	1.4	1.1	.90	1.1	1.4	12	1.6	.93	.83	.30	.72	.80
29	1.3	1.0	.90	1.0	1.3	10	1.5	.88	.73	.30	.77	.75
30	1.2	1.0	.90	1.0	---	9.4	1.4	.83	.68	.30	.78	.70
31	1.2	---	.90	1.0	---	9.4	---	.83	---	.30	.93	---
TOTAL	34.20	33.36	29.55	31.60	32.3	373.9	95.3	33.88	861.51	14.04	14.73	27.11
MEAN	1.10	1.11	.95	1.02	1.11	12.1	3.18	1.09	28.7	.45	.48	.90
MAX	1.6	1.2	1.1	1.4	1.5	32	8.7	1.4	515	.64	.93	1.2
MIN	.62	.88	.85	.60	1.0	2.7	1.4	.83	.65	.30	.25	.70
AC-FT	68	66	59	63	64	742	189	67	1710	28	29	54

CAL YR 1979 TOTAL 9373.02 MEAN 25.7 MAX 1040 MIN .26 AC-FT 18590
WTR YR 1980 TOTAL 1581.48 MEAN 4.32 MAX 515 MIN .25 AC-FT 3140

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
02...	1215	.60	1020	8.2	17.0	12.0	7.6	78	77	32	220	0
24...	1535	1.2	995	--	15.0	6.0	--	--	--	--	--	--
NOV												
06...	1100	1.2	980	8.3	3.0	2.5	12.6	100	K1	28	220	0
21...	1140	1.1	1100	--	2.0	.5	--	--	--	--	--	--
DEC												
05...	1315	1.1	1130	8.2	3.0	1.0	13.0	101	K6	22	260	0
17...	1310	.87	1100	--	6.0	.5	--	--	--	--	--	--
JAN												
15...	0820	1.1	1200	7.7	-4.0	.0	9.4	70	380	82	300	0
25...	1135	1.4	1080	--	.0	.0	--	--	--	--	--	--
FEB												
07...	1425	1.2	1130	7.7	-8.0	.0	11.8	87	K2	200	290	0
08...	1415	1.2	1110	--	.0	.0	--	--	--	--	--	--
MAR												
08...	1350	2.7	955	--	.0	.5	--	--	--	--	--	--
21...	0900	26	675	7.7	-.5	.0	10.8	81	K16	1900	110	0
21...	1550	28	690	--	2.0	.5	--	--	--	--	--	--
APR												
02...	1355	7.8	800	--	4.0	1.0	--	--	--	--	--	--
09...	0830	3.4	770	8.2	8.0	1.5	12.1	94	K1	90	130	0
23...	1620	1.8	958	--	17.0	15.0	--	--	--	--	--	--
MAY												
07...	1320	1.3	1010	8.4	11.5	14.0	9.0	95	K9	30	230	0
23...	1505	.86	1030	8.1	32.0	21.5	--	--	--	--	240	0
JUN												
03...	1445	.83	1160	8.4	26.0	22.0	7.9	99	--	--	240	0
16...	1100	238	392	7.5	--	14.5	--	--	--	--	86	12
JUL												
10...	0825	.60	940	8.5	23.5	20.0	6.7	80	K36	200	230	0
23...	1730	.32	1040	--	31.5	25.0	--	--	--	--	--	--
AUG												
13...	1315	.35	1120	7.8	22.5	20.0	7.2	84	29	92	250	0
20...	1340	.65	1190	8.2	15.0	18.0	--	--	--	--	270	0
21...	1440	.64	--	--	--	16.0	--	--	--	--	--	--
SEP												
05...	0730	.73	980	8.6	11.0	14.0	7.0	74	K29	110	200	0
23...	1225	.90	990	--	--	--	--	--	--	--	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
02...	40	28	160	61	4.7	5.8	400	0	330	4.0	250	5.6
NOV												
06...	42	28	140	73	4.1	6.0	400	0	328	3.2	210	6.7
21...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
05...	51	32	150	71	4.1	4.9	471	0	390	4.8	220	.5
JAN												
15...	59	36	160	53	4.1	6.0	499	0	409	16	250	7.2
25...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
07...	60	34	140	50	3.6	7.1	425	0	348	14	240	7.8
08...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
08...	--	--	--	--	--	--	--	--	--	--	--	--
21...	22	13	120	69	5.6	9.0	168	0	138	5.4	200	5.4
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
09...	27	16	130	67	4.9	5.8	215	0	176	2.2	210	4.2
23...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
07...	46	27	160	60	5.2	6.5	390	7	332	2.6	230	6.0
23...	47	30	150	57	4.2	4.4	448	0	367	5.7	190	7.9
JUN												
03...	46	30	160	58	4.5	6.9	443	8	377	2.9	210	5.4
16...	19	9.4	45	52	2.1	4.4	91	0	75	4.6	99	11
JUL												
10...	48	27	120	52	3.4	8.3	294	5	249	1.5	230	10
23...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
13...	49	30	160	58	5.0	8.4	366	0	300	9.3	300	11
20...	49	36	180	59	4.8	5.5	365	8	313	3.8	330	13
21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
05...	38	26	150	61	4.6	7.5	332	5	280	2.2	240	4.5

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
02...	.4	4.8	--	692	.94	1.12	.01	--	.000	.00	.66	.66
24...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
06...	.4	5.3	639	636	.87	2.07	.01	.00	.040	.05	.40	.44
21...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
05...	.4	9.0	708	700	.96	2.10	.10	.03	.010	.01	1.2	1.2
17...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
15...	.4	13	795	778	1.08	2.36	.12	.11	.140	.17	.84	.98
25...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
07...	.3	13	736	713	1.00	2.38	.20	.19	.070	.08	.52	.59
08...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
08...	--	--	--	--	--	--	--	--	--	--	--	--
21...	.1	8.0	466	463	.63	32.7	.23	.26	.370	.45	1.8	2.2
21...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
02...	--	--	--	--	--	--	--	--	--	--	--	--
09...	.2	5.8	503	506	.68	4.62	.05	.06	.130	.16	.97	1.1
23...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
07...	.4	4.4	685	680	.93	2.40	.01	.01	.030	.04	1.4	1.4
23...	.4	2.2	683	654	.93	1.59	--	--	--	--	--	--
JUN												
03...	1.1	5.1	687	691	.93	1.54	.03	.01	.100	.12	.81	.91
16...	.2	6.5	245	242	.33	157	--	--	--	--	--	--
JUL												
10...	.5	9.4	618	603	.84	1.00	.00	.00	.000	.00	1.2	1.2
23...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
13...	.4	5.7	769	746	1.05	.73	.00	.00	.010	.01	1.3	1.3
20...	.3	5.6	816	809	1.11	1.43	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
05...	.5	4.0	665	639	.90	1.31	.00	.00	.030	.04	1.2	1.2
23...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT											
02...	.67	3.0	.030	.09	.020	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	.45	2.0	.020	.06	.010	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
05...	1.3	5.8	.020	.06	.000	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	1.1	4.9	.030	.09	.000	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
07...	.79	3.5	.070	.21	.010	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
21...	2.4	11	.260	.80	.170	50	2	0	28	200	100
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
09...	1.2	5.1	.140	.43	.050	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	1.4	6.2	.080	.25	.020	40	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	.94	4.2	.060	.18	.020	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	1.2	5.3	.100	.31	.010	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	1.3	5.8	.070	.21	.030	10	3	1	17	0	0
SEP											
05...	1.2	5.3	.060	.18	.020	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT											
02...	--	--	--	--	--	--	420	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	340	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
05...	--	--	--	--	--	--	320	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	410	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
07...	--	--	--	--	--	--	320	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
21...	60	180	0	0	<1	1	340	0	0	0	8
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	270	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	90	--	--	--	<1	--	350	--	--	0	--
23...	--	--	--	--	--	--	200	--	--	--	--
JUN											
03...	--	--	--	--	--	--	430	--	--	--	--
16...	--	--	--	--	--	--	70	--	--	--	--
JUL											
10...	--	--	--	--	--	--	330	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	140	180	0	--	<1	0	370	0	0	10	8
20...	--	--	--	--	--	--	310	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
05...	--	--	--	--	--	--	390	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT											
02...	--	--	--	--	--	--	--	--	20	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	--	--	20	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
DEC											
05...	--	--	--	--	--	--	--	--	10	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	--	--	20	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
07...	--	--	--	--	--	--	--	--	110	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
21...	3	0	<3	30	7	0	<10	33	360	20	10
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	250	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	<3	--	--	--	<10	--	27	--	--
23...	--	--	--	--	--	--	--	--	100	--	--
JUN											
03...	--	--	--	--	--	--	--	--	<10	--	--
16...	--	--	--	--	--	--	--	--	20	--	--
JUL											
10...	--	--	--	--	--	--	--	--	20	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	1	--	<3	10	13	--	35	25	12	30	0
20...	--	--	--	--	--	--	--	--	30	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
05...	--	--	--	--	--	--	23	--	30	--	--
23...	--	--	--	--	--	--	--	--	--	--	--

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, SUS- PENDED RECOV. (UG/L AS MN) (01054)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY SUS- PENDED RECOV- ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG) (71921)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, SUS- PENDED RECOV. (UG/L AS MO) (01061)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
21...	9	210	40	170	.1	.1	.0	.03	2	0	<10
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	28	--	--	59	--	.1	--	--	--	--	<10
23...	--	--	--	50	--	--	--	--	--	--	--
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	120	--	--	--	--	--	--	--
JUL											
10...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	32	150	140	9	.1	.0	.1	.08	7	--	<10
20...	--	--	--	10	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
05...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, SUS- PENDED RECOV- ERABLE (UG/L AS NI) (01066)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, SUS- PENDED TOTAL (UG/L AS SE) (01146)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) (01148)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
21...	0	6	6	0	20	0	0	0	0	160	<6.0
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	3	--	--	--	0	--	390	<6.0
23...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	9	8	4	4	30	0	0	0	0	460	<6.0

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, SUS- PENDED RECOV- ERABLE (UG/L AS ZN) (01091)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)
MAR							
21...	290	290	<3	41	<6.2	1.9	11
APR							
09...	--	--	--	--	--	--	--
MAY							
07...	--	--	<3	--	--	--	--
JUN							
03...	--	--	--	--	--	--	--
JUL							
10...	--	--	--	--	--	--	--
AUG							
13...	80	--	<3	38	18	.7	18
21...	--	--	--	--	--	--	--
SEP							
05...	--	--	--	--	--	--	--

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT 02...	--	--	--	15	.6	13	.02
NOV 06...	--	--	--	8.6	.1	12	.04
DEC 05...	--	--	--	7.1	.2	47	.14
JAN 15...	--	--	--	9.2	.6	50	.15
FEB 07...	--	--	--	9.1	.6	9	.03
MAR 21...	1.5	11	1.5	23	1.[illegible]	17	1.2
APR 09...	--	--	--	12	.7	20	.18
MAY 07...	--	--	--	12	1.4	34	.12
JUN 03...	--	--	--	18	1.6	29	.06
JUL 10...	--	--	--	14	1.1	38	.06
AUG 13...	.9	9.8	.8	17	.9	21	.02
21...	--	--	--	--	--	24	.04
SEP 05...	--	--	--	18	.1	13	.03

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)
AUG 13...	45	52	59	63	65	74	88	98	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
OCT 02...	28	3.94	1.20	4.57	4.88
AUG 13...	34	6.86	1.80	24.4	27.6
SEP 05...	38	2.78	1.12	11.3	11.3

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 2,79	NOV 6,79	DEC 5,79	JAN 15,80	FEB 7,80	MAR 21,80
TIME	1215	1100	1315	0820	1425	0900
TOTAL CELLS/ML	1500	1000	360	100	110	37000
DIVERSITY: DIVISION	1.7	1.4	0.9	1.0	0.6	0.1
.CLASS	1.7	1.6	1.5	1.0	0.6	0.1
..ORDER	2.4	0.0	1.9	1.0	1.2	0.1
...FAMILY	3.0	0.0	1.9	1.9	2.6	0.1
....GENUS	3.5	0.0	1.9	1.9	2.7	0.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
...COELASTRACEAE												
....COELASTRUM	130	9	--	-	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	65	4	100	10	14	4	10	10	5	5	*	0
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....CHODATELLA	26	2	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	52	4	--	-	--	-	--	-	--	-	--	-
....GLOEOACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	14	1	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....POLYEDRIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	210	14	29	3	--	-	40#	40	10	10	--	-
....TETRASTRUM	--	-	43	4	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	320#	22	--	-	86#	24	--	-	--	-	*	0
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	120	8	86	8	14	4	--	-	20#	19	--	-
....MELOSIRA	39	3	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	5	5	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	35#	35	15	14	--	-
...NAVICULACEAE												
....ENTOMONEIS	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	13	1	--	-	--	-	5	5	15	14	--	-
....PLEUROSIGMA	--	-	--	-	--	-	--	-	5	5	--	-
...NITZSCHIACEAE												
....NITZSCHIA	100	7	43	4	86#	24	10	10	30#	29	*	0
.CHRYSOPHYCEAE	--	-	130	13	--	-	--	-	--	-	--	-
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	420#	41	160#	44	--	-	--	-	--	-
...OCHROMONADACEAE												
....KEPHYRIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
....OCHROMONAS	--	-	14	1	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	13	1	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	14	1	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	OCT 2,79 1215		NOV 6,79 1100		DEC 5,79 1315		JAN 15,80 0820		FEB 7,80 1425		MAR 21,80 0900	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	52	4	110	11	--	-	--	-	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	37000#	99
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	78	5	14	1	--	-	--	-	--	-	*	0
....PHACUS	26	2	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	190	13	--	-	--	-	--	-	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	*	0
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	26	2	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 9,80		MAY 7,80		JUN 3,80		JUL 10,80		AUG 13,80		SEP 5,80	
TIME	0830		1320		1445		0825		1315		0730	
TOTAL CELLS/ML	6300		12000		8000		17000		5900		1200	
DIVERSITY: DIVISION	1.3		2.0		1.6		1.6		1.3		1.3	
.CLASS	1.3		2.3		1.6		1.6		1.3		1.3	
..ORDER	1.8		2.4		1.8		2.1		1.4		1.6	
...FAMILY	1.9		2.7		2.6		2.5		2.1		2.3	
....GENUS	1.9		3.3		3.2		3.0		3.3		3.3	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	100	2	--	-	--	-	--	-	--	-	--	-
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	370	5	--	-	--	-	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	370	5	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	30	1	--	-
....MICRACTINIUM	--	-	--	-	--	-	500	3	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	620	10	690	6	1400#	17	1100	6	1100#	19	150	13
....CHLORELLA	--	-	--	-	140	2	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	46	1	*	0	89	2	--	-
....DICTYOSPHAERIUM	--	-	1700	14	--	-	--	-	1300#	23	270#	23
....GLOEOACTINIUM	--	-	--	-	--	-	500	3	--	-	--	-
....KIRCHNERIELLA	--	-	340	3	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	260	2	--	-	--	-	180	3	--	-
....POLYEDRIOPSIS	--	-	--	-	--	-	*	0	--	-	--	-
....SELENASTRUM	--	-	--	-	46	1	--	-	60	1	13	1
....TETRAEDRON	--	-	86	1	--	-	250	2	180	3	26	2
....TREUBARIA	--	-	--	-	--	-	*	0	--	-	--	-
....WESTELLA	--	-	--	-	730	9	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	370	5	1000	6	360	6	100	9
....SCENEDESMUS	--	-	520	4	550	7	1000	6	890#	15	180#	16
....TETRASTRUM	--	-	--	-	--	-	500	3	120	2	52	4
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	410	7	170	1	180	2	380	2	--	-	64	6
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	3800#	61	340	3	320	4	2500#	15	180	3	26	2
....MELOSIRA	--	-	260	2	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	46	1	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	52	1	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....ENTOMONEIS	--	-	86	1	--	-	--	-	--	-	--	-
....NAVICULA	52	1	--	-	46	1	*	0	--	-	--	-
....PLEUROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	260	4	340	3	--	-	380	2	180	3	39	3
.CHRYSOPHYCEAE	--	-	--	-	--	-	--	-	--	-	--	-
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	2800#	23	--	-	--	-	--	-	--	-
...OCHROMONADACEAE												
....KEPHYRIOPSIS	--	-	86	1	--	-	--	-	--	-	--	-
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	46	1	*	0	30	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	86	1	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	92	1	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM, EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	APR 9,80 0830		MAY 7,80 1320		JUN 3,80 1445		JUL 10,80 0825		AUG 13,80 1315		SEP 5,80 0730	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	2200#	17	2700#	34	1000	6	630	11	140	12
..HORMOGONALES												
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	6900#	41	--	-	--	-
....SCHIZOTHRIX	830	13	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	2000#	16	180	2	190	1	60	1	13	1
....PHACUS	--	-	--	-	--	-	--	-	30	1	13	1
....TRACHELOMONAS	52	1	520	4	370	5	190	1	450	8	39	3
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	*	--	*	--	*	--	*	--	*	--	*
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	52	1	--	-	--	-	--	-	30	1	26	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06344610 GREEN RIVER TRIBUTARY NEAR NEW HRADEC, ND

LOCATION.--Lat 47°00'25", long 102°59'24", in the SE¼NE¼NE¼, sec.29, T.141 N., R.97 W., Dunn County, Hydrologic Unit 10130201, on left bank upstream from county highway culvert, and 5 mi (8 km) west of New Hradec.

DRAINAGE AREA.--22.4 mi² (58.00 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder.

REMARKS.--Records fair except those for the winter period, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 600 ft³/s (17.0 m³/s) Mar. 23, 1979, gage height, 7.29 ft (2.222 m); minimum daily, 0.06 ft³/s (0.002 m³/s) July 28 to Aug. 4, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 100 ft³/s (2.83 m³/s) June 15, gage height, 7.64 ft (2.329 m), only peak above base of 40 ft³/s (1.13 m³/s); minimum daily, 0.06 ft³/s (0.002 m³/s) July 28 to Aug. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.24	.24	.18	.16	.21	.48	.23	.12	.12	.06	.28
2	.13	.22	.28	.18	.17	.24	.46	.23	.13	.13	.06	.20
3	.11	.19	.27	.18	.17	.23	.44	.23	.13	.15	.06	.17
4	.12	.19	.32	.18	.18	.23	.42	.20	.13	.17	.06	.14
5	.14	.19	.30	.18	.16	.22	.40	.23	.12	.14	.08	.14
6	.13	.21	.34	.17	.18	.22	.38	.22	.11	.14	.07	.14
7	.16	.21	.28	.16	.18	.22	.36	.18	.17	.12	.07	.11
8	.18	.22	.27	.16	.18	.23	.33	.19	.18	.11	.07	.10
9	.18	.21	.28	.16	.18	.23	.30	.20	.15	.13	.10	.09
10	.18	.21	.27	.16	.18	.23	.28	.19	.13	.13	.15	.10
11	.17	.21	.22	.16	.18	.24	.26	.18	.11	.10	.11	.11
12	.17	.22	.21	.16	.17	.25	.26	.18	.88	.08	.09	.13
13	.18	.22	.21	.16	.17	.27	.26	.18	1.9	.08	.08	.15
14	.21	.22	.21	.16	.17	.32	.26	.18	.69	.08	.06	.17
15	.19	.24	.19	.17	.17	.50	.25	.19	30	.07	.08	.17
16	.19	.24	.17	.17	.17	.60	.40	.19	4.2	.08	.37	.13
17	.21	.24	.17	.18	.17	.70	.35	.19	1.0	.07	.42	.12
18	.21	.24	.18	.18	.18	1.2	.35	.18	.51	.07	.30	.13
19	.21	.24	.19	.18	.18	1.3	.30	.18	.35	.13	.20	.15
20	.21	.21	.19	.18	.18	1.2	.30	.18	.32	.22	.17	.14
21	.17	.21	.19	.18	.18	1.2	.28	.17	.26	.18	.17	.15
22	.19	.21	.19	.18	.18	1.0	.28	.14	.25	.12	.15	.19
23	.21	.22	.18	.18	.18	1.1	.25	.12	.22	.11	.13	.18
24	.21	.22	.18	.18	.18	1.0	.25	.10	.19	.10	.13	.17
25	.21	.22	.18	.17	.18	1.0	.23	.10	.17	.08	.10	.18
26	.22	.22	.18	.16	.19	.90	.23	.08	.13	.07	.08	.17
27	.22	.21	.18	.16	.22	.90	.23	.07	.14	.07	.08	.17
28	.22	.21	.18	.16	.21	.80	.23	.08	.17	.06	.08	.15
29	.22	.22	.18	.16	.21	.70	.22	.11	.13	.06	.13	.15
30	.22	.21	.18	.16	---	.60	.20	.10	.12	.06	.15	.14
31	.21	---	.18	.16	---	.50	---	.11	---	.06	.20	---
TOTAL	5.71	6.52	6.79	5.26	5.23	18.54	9.24	5.11	43.11	3.29	4.06	4.52
MEAN	.18	.22	.22	.17	.18	.60	.31	.16	1.44	.11	.13	.15
MAX	.22	.24	.34	.18	.22	1.3	.48	.23	30	.22	.42	.28
MIN	.11	.19	.17	.16	.16	.21	.20	.07	.11	.06	.06	.09
AC-FT	11	13	13	10	10	37	18	10	86	6.5	8.1	9.0

CAL YR 1979 TOTAL 2640.86 MEAN 7.24 MAX 290 MIN .09 AC-FT 5240
WTR YR 1980 TOTAL 117.38 MEAN .32 MAX 30 MIN .06 AC-FT 233

06344610 GREEN RIVER TRIBUTARY NEAR NEW HRADEC, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
02...	0935	.12	2150	--	17.0	--	--	--	--
NOV									
27...	1330	.19	2300	7.3	.5	230	0	43	30
DEC									
31...	1200	.18	2450	--	.5	--	--	--	--
FEB									
11...	1055	.24	2500	--	.5	--	--	--	--
MAR									
24...	0925	.94	1200	--	.5	--	--	--	--
31...	1055	.48	950	--	.5	--	--	--	--
APR									
03...	1625	.44	900	--	1.5	--	--	--	--
14...	1400	.28	1075	--	1.5	--	--	--	--
21...	1150	.24	1000	--	2.0	--	--	--	--
MAY									
09...	1055	.20	900	--	18.0	--	--	--	--
JUN									
09...	1035	.17	2450	E8.9	19.0	130	0	19	20
16...	1200	3.8	1000	7.1	17.5	170	9	28	24
AUG									
11...	1800	.12	900	--	22.0	--	--	--	--
SEP									
03...	1025	.16	2000	--	16.0	--	--	--	--

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT									
02...	--	--	--	--	--	--	--	--	--
NOV									
27...	500	90	14	8.6	710	580	4.5	.5	8.1
JUN									
09...	520	89	20	5.1	700	600	4.3	.7	1.2
16...	160	66	5.4	11	160	350	6.3	.6	11
AUG									
11...	--	--	--	--	--	--	--	--	--
SEP									
03...	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT									
02...	--	--	--	--	--	--	--	--	--
NOV									
27...	1600	2.18	.82	1.5	1100	220	210	1	700
JUN									
09...	1590	2.16	.73	1.3	1300	460	40	2	420
16...	688	.94	7.21	2.2	250	210	30	<10	240
AUG									
11...	--	--	--	--	--	--	--	--	--
SEP									
03...	--	--	--	--	--	--	--	--	--

E - Estimated.

06345500 HEART RIVER NEAR RICHARDTON, ND

LOCATION.--Lat 46°44'46", long 102°18'27", in NE¼ sec.29, T.138 N., R.92 W., Stark County, Hydrologic Unit 10130202, on right bank 5 ft (2 m) upstream from bridge on State Highway 8, 0.5 mi (0.8 km) downstream from Plum Creek, and 9.5 mi (15.3 km) south of Richardton.

DRAINAGE AREA.--1,240 mi² (3,210 km²), approximately.

PERIOD OF RECORD.--May 1903 to September 1922, April 1943 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS (WATER YEARS).--WSP 1209: Drainage area. WSP 1239: 1906, 1918(M), 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 2,153.67 ft (656.439 m) National Geodetic Vertical Datum of 1929. May 18, 1903, to Sept. 30, 1922, nonrecording gage at 3 sites in 1 mi (2 km) reach below present site at different datums. Apr. 14, 1943, to July 7, 1947, nonrecording gage at present site and datum.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Edward Arthur Patterson Lake (station 06343500) 59 mi (95 km) upstream.

AVERAGE DISCHARGE.--56 years, 105 ft³/s (2.97 m³/s), 76,070 acre-ft/yr (93.8 hm³/yr); median of yearly mean discharges, 96 ft³/s (2.72 m³/s), 69,600 acre-ft/yr (86 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,400 ft³/s (663 m³/s) Apr. 16, 1950, gage height, 28.05 ft (8.550 m), from high-water mark in gage well; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 5, 1938, reached a stage of about 26 ft (7.9 m), from information by local residents, discharge, 16,000 ft³/s (453 m³/s); flood of Mar. 25, 1943, reached a stage of 24.2 ft (7.38 m) from floodmarks, discharge, 11,700 ft³/s (331 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 565 ft³/s (16.0 m³/s) June 18, gage height, 8.36 ft (2.548 m); minimum daily, 0.10 ft³/s (0.003 m³/s) Aug. 6-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	16	13	13	3.0	12	85	13	4.5	13	1.6	4.0
2	6.4	15	13	12	3.5	13	75	13	4.1	13	1.2	3.6
3	6.4	15	13	11	3.5	14	65	13	115	12	.40	6.9
4	6.0	16	15	11	4.0	12	55	13	107	12	.40	6.7
5	6.9	16	16	10	6.0	11	60	13	44	12	.20	5.1
6	7.1	15	16	9.0	7.0	11	80	13	24	12	.10	3.8
7	6.4	15	16	8.0	8.0	12	75	13	16	21	.10	3.2
8	6.4	14	15	6.0	8.0	13	70	13	12	19	.10	2.6
9	8.0	14	16	4.0	8.0	15	65	12	9.2	16	.10	2.6
10	8.7	16	16	2.0	7.5	16	60	11	7.6	14	1.0	2.4
11	12	15	10	2.0	7.5	18	49	10	6.0	13	1.3	2.0
12	11	15	15	2.0	7.0	19	46	9.7	4.9	13	1.2	2.0
13	10	15	13	2.5	7.0	25	43	9.4	6.2	13	1.1	3.0
14	10	16	13	3.0	6.5	30	40	9.2	21	12	1.0	3.6
15	11	16	14	3.5	6.0	35	37	8.7	120	12	8.0	3.6
16	11	16	11	4.0	6.0	40	34	8.9	143	12	6.5	3.6
17	12	16	10	4.5	7.0	40	33	8.7	187	12	6.0	3.6
18	13	15	12	5.0	8.0	45	32	8.2	430	12	5.5	4.1
19	15	14	13	5.5	9.0	45	29	7.8	190	13	5.0	4.1
20	14	13	13	6.0	9.0	45	29	7.1	95	13	6.5	4.3
21	15	15	13	6.5	9.0	45	27	6.4	64	12	7.0	4.1
22	15	15	13	7.0	9.0	50	25	6.0	48	12	6.0	3.8
23	15	14	13	7.5	9.0	55	26	5.8	39	11	5.5	3.6
24	15	15	13	8.0	9.0	60	23	5.1	34	11	5.0	4.1
25	15	14	13	8.0	9.0	70	21	4.9	28	9.7	4.5	4.6
26	14	14	13	7.0	10	70	19	4.1	23	8.9	4.0	5.1
27	13	14	13	6.0	11	75	17	4.1	19	7.8	4.0	4.8
28	16	13	13	5.0	12	85	15	4.1	16	6.4	4.0	4.1
29	19	13	13	4.0	12	90	14	4.1	15	5.6	4.0	4.8
30	17	13	13	3.0	---	100	13	3.4	13	4.1	3.8	5.1
31	16	---	13	3.0	---	100	---	3.8	---	2.6	5.0	---
TOTAL	357.5	443	416	189.0	221.5	1271	1262	266.5	1845.5	360.1	100.10	118.9
MEAN	11.5	14.8	13.4	6.10	7.64	41.0	42.1	8.60	61.5	11.6	3.23	3.96
MAX	19	16	16	13	12	100	85	13	430	21	8.0	6.9
MIN	6.0	13	10	2.0	3.0	11	13	3.4	4.1	2.6	.10	2.0
AC-FT	709	879	825	375	439	2520	2500	529	3660	714	199	236

CAL YR 1979 TOTAL 54457.30 MEAN 149 MAX 3240 MIN 5.0 AC-FT 108000
WTR YR 1980 TOTAL 6851.10 MEAN 18.7 MAX 430 MIN .10 AC-FT 13590

06346000 LAKE TSCHIDA NEAR GLEN ULLIN, ND

LOCATION.--Lat 46°35'48", long 101°48'34", in SW¼NE¼ sec.13, T.136 N., R.89 W., Grant County, Hydrologic Unit 10130202, 10 mi (16 km) upstream from Heart Butte Creek, and 14 mi (23 km) north of Elgin.

DRAINAGE AREA.--1,710 mi^2 (4,430 km^2), approximately.

PERIOD OF RECORD.--August 1949 to current year. Prior to October 1957, published as Heart Butte Reservoir near Glen Ullin.

GAGE.--Nonrecording gage. Datum of gage is at National Geodetic Vertical Datum of 1929, levels by Water and Power Resources Service.

REMARKS.--Reservoir is formed by earthfill dam; storage began Sept. 29, 1949; dam completed Dec. 9, 1949. Total capacity is 430,000 acre-ft (530 hm^3) at maximum pool, elevation 2,118.2 ft (645.627 m). Dead storage is 6,750 acre-ft (8.32 hm^3) below lowest point of outlet, elevation 2,030.0 ft (618.744 m). Active conservation storage is 69,030 acre-ft (85.1 hm^3) between elevation 2,030.0 ft (618.744 m) and 2,064.5 ft (629.260 m), crest of spillway. Figures given herein represent total contents. Controlled releases are through 4 by 5 ft (1.219 by 1.524 m) slide gate. The spillway is uncontrolled "glory hole" type and discharges through a conduit 14 ft (4.27 m) in diameter. The reservoir is for flood control, irrigation, and incidental water supply.

COOPERATION.--Record of elevations and contents furnished by Water and Power Resources Service. Monthend elevations interpolated from once-daily readings. Extremes are those observed.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 174,000 acre-ft (215 hm^3) Apr. 9, 1952, elevation, 2,086.23 ft (635.883 m); minimum since first reaching spillway level, 40,840 acre-ft (50.4 hm^3) Mar. 6, 1962, elevation, 2,052.5 ft (625.60 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 74,500 acre-ft (91.9 hm^3) June 24, elevation, 2,064.12 ft (629.144 m); minimum, 61,500 acre-ft (75.8 hm^3) Sept. 30, elevation, 2,060.10 ft (627.918 m).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,061.24	65,100	—
Oct. 31	2,060.76	63,600	-1,500
Nov. 30	2,060.62	63,200	-400
Dec. 31	2,060.19	61,800	-1,400
CAL YR 1979	—	—	-6,700
Jan. 31	2,060.21	61,900	+100
Feb. 29	2,060.23	61,900	0
Mar. 31	2,061.28	65,200	+3,300
Apr. 30	2,062.24	68,300	+3,100
May 31	2,060.83	63,800	-4,500
June 30	2,063.79	73,400	+9,600
July 31	2,061.56	66,100	-7,300
Aug. 31	2,060.37	62,400	-3,700
Sept. 30	2,060.10	61,500	-900
WTR YR 1980	—	—	-3,600

06348000 HEART RIVER NEAR LARK, ND

LOCATION.--Lat 46°36'37", long 101°22'54", in NW¼NW¼SW¼ sec.9, T.136 N., R.85 W., Grant County, Hydrologic Unit 10130203, on right bank 20 ft (6 m) downstream from county highway bridge, 0.6 mi (1.0 km) downstream from Big Muddy Creek, and 10 mi (16 km) north of Lark.

DRAINAGE AREA.--2,750 mi² (7,120 km²), approximately.

PERIOD OF RECORD.--June 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,802.83 ft (549.503 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Nov. 16, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good except those for the winter period, which are poor. Flow regulated by Lake Tschida (06346000) 45 mi (72 km) upstream since 1949.

AVERAGE DISCHARGE.--34 years, 217 ft³/s (6.145 m³/s), 157,200 acre-ft/yr (194 hm³/yr); median of yearly mean discharges, 172 ft³/s (4.87 m³/s), 125,000 acre-ft/yr (154 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,200 ft³/s (827 m³/s) Apr. 17, 1950, gage height, 20.70 ft (6.309 m), from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of contracted-opening measurement of peak flow; no flow Jan. 16 to Mar. 4, 1950, Jan. 17-26, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,100 ft³/s (31.2 m³/s) June 17, gage height, 6.80 ft (2.073 m); minimum daily, 9.0 ft³/s (0.25 m³/s) Jan. 29-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	28	36	17	9.5	10	110	26	61	40	40	186
2	26	28	36	16	9.5	10	115	65	61	53	39	109
3	28	30	37	15	9.5	10	112	67	66	47	61	79
4	27	28	38	15	10	10	104	86	97	37	69	61
5	28	30	39	15	10	10	105	78	250	51	78	50
6	30	36	40	13	10	10	102	86	521	56	76	48
7	29	30	40	12	10	10	114	61	289	60	70	44
8	30	33	39	11	10	10	102	68	220	55	67	40
9	31	33	38	10	10	10	90	65	138	51	72	36
10	33	32	38	10	10	10	81	65	104	52	123	26
11	33	32	37	10	10	10	73	44	81	46	112	24
12	32	30	36	10	10	10	63	33	70	46	86	22
13	32	28	36	11	10	10	58	28	66	41	69	20
14	34	27	36	11	10	10	54	43	61	41	60	20
15	33	25	36	12	10	10	49	48	54	44	60	20
16	34	27	36	12	10	25	45	40	513	42	72	21
17	34	26	35	12	10	50	40	39	774	41	62	21
18	34	25	36	12	11	80	37	39	232	56	69	21
19	34	26	37	12	11	100	35	40	128	74	65	22
20	34	26	38	12	11	120	33	47	90	76	62	22
21	35	25	38	12	11	130	32	32	72	78	58	21
22	37	25	35	12	11	120	29	26	56	80	56	21
23	37	24	30	12	11	110	26	29	42	76	54	20
24	35	23	26	12	11	100	20	37	34	73	62	20
25	35	23	25	11	11	90	17	42	32	68	93	19
26	36	26	27	10	11	85	15	41	17	39	70	20
27	36	30	27	9.5	11	85	13	34	44	34	60	21
28	35	34	25	9.5	11	90	13	50	41	39	57	21
29	28	36	23	9.0	11	95	13	74	51	40	197	19
30	27	36	20	9.0	---	100	13	57	49	40	212	18
31	27	---	17	9.0	---	105	---	56	---	40	99	---
TOTAL	991	862	1037	363.0	300.5	1635	1713	1546	4314	1616	2430	1092
MEAN	32.0	28.7	33.5	11.7	10.4	52.7	57.1	49.9	144	52.1	78.4	36.4
MAX	37	36	40	17	11	130	115	86	774	80	212	186
MIN	26	23	17	9.0	9.5	10	13	26	17	34	39	18
AC-FT	1970	1710	2060	720	596	3240	3400	3070	8560	3210	4820	2170

CAL YR 1979 TOTAL 104276.0 MEAN 286 MAX 3600 MIN 17 AC-FT 206800
WTR YR 1980 TOTAL 17899.5 MEAN 48.9 MAX 774 MIN 9.0 AC-FT 35500

06348490 SWEETBRIAR RESERVOIR NEAR JUDSON, ND

LOCATION.--Lat 46°51'55", long 101°15'35", in SE¼SE¼ sec.10, T.139 N., R.84 W., Morton County, Hydrologic Unit 10130203, on south shore of reservoir 700 ft (210 m) west of spillway, and 2.5 mi (4.0 km) northeast of Judson.

DRAINAGE AREA.--152 mi² (394 km²).

PERIOD OF RECORD.--July 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,900.00 ft (579.120 m) National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD.

REMARKS.--Reservoir is formed by an earth-fill dam on Interstate 94; storage began April 1964. Capacity at spillway elevation, 1,940.00 ft (591.312 m) is 3,320 acre-ft (4.09 hm³). Controlled releases are through a 12-inch (0.305 m) pipe. The spillway is an uncontrolled drop-inlet type. Figures herein represent total contents based on capacity table dated June 13, 1967. The reservoir is for recreation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,220 acre-ft (6.46 hm³) Apr. 7, 1969, elevation, 1,944.97 ft (592.827 m); minimum since initial filling of reservoir, 2,500 acre-ft (3.08 hm³) Dec. 8, 1974, elevation, 1,936.93 ft (590.376 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,410 acre-ft (4.20 hm³) Sept. 2, elevation, 1,940.3 ft (591.40 m); minimum, 2,920 acre-ft (3.60 hm³) Feb. 19-22, elevation, 1,938.52 ft (590.860 m).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,939.01	3,040	--
Oct. 31	1,938.62	2,940	-100
Nov. 30	*1,938.54	2,920	-20
Dec. 31	1,938.54	2,920	0
CAL YR 1979	--	--	+150
Jan. 31	1,938.53	2,920	0
Feb. 29	1,938.53	2,920	0
Mar. 31	1,940.10	3,350	+430
Apr. 30	1,939.83	3,270	-80
May 31	1,939.34	3,140	-130
June 30	1,939.80	3,260	+120
July 31	1,939.29	3,120	-140
Aug. 31	1,940.17	3,370	+250
Sept. 30	*1,939.98	3,310	-60
WTR YR 1980	--	--	+270

* Estimated

06349000 HEART RIVER NEAR MANDAN, ND

LOCATION.--Lat 46°50'02", long 100°58'27", in NW¼NE¼ sec.25, T.139 N., R.82 W., Morton County, Hydrologic Unit 10130203, on left bank near downstream wingwall of bridge on county highway, 3 mi (5 km) west of Mandan, and 4 mi (6 km) downstream from Sweetbriar Creek.

DRAINAGE AREA.--3,310 mi² (8,570 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to September 1924, March 1928 to June 1933, August 1937 to current year. Published as "at Sunny" 1924, 1928-33.

REVISED RECORDS.--WSP 926: 1938. WSP 1209: Drainage area. WSP 1239: 1924, 1928-29, 1948.

GAGE.--Water-stage recorder. Datum of gage is 1,638.70 ft (499.476 m) National Geodetic Vertical Datum of 1929, and 1,623.03 ft (494.700 m) above Burlington Northern Railway datum. See WSP 1729 or 1917 for history of changes prior to June 30, 1958.

REMARKS.--Records good except those for the winter period, which are fair. Flow regulated by Lake Tschida (station 06346000) 105 mi (169 km) upstream since 1949. Some diversions above station.

AVERAGE DISCHARGE.--47 years (1928-32, 1937-80), 258 ft³/s (7.307 m³/s), 186,900 acre-ft/yr (230 hm³/yr); median of yearly mean discharges, 191 ft³/s (5.41 m³/s), 138,000 acre-ft/yr (170 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 30,500 ft³/s (864 m³/s) Apr. 19, 1950, gage height, 23.64 ft (7.205 m); maximum gage height, 25.75 ft (7.849 m) Apr. 4, 1952, ice jam; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,460 ft³/s (41.3 m³/s) June 18, gage height, 5.16 ft (1.573 m); minimum daily discharge, 8.0 ft³/s (0.23 m³/s) Feb. 21 to Mar. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	50	39	31	10	8.0	170	32	47	34	14	282
2	54	50	39	31	10	8.0	180	31	46	34	16	200
3	52	50	39	30	10	8.0	190	28	46	31	16	305
4	51	50	39	29	10	8.0	200	28	54	26	16	194
5	50	50	39	29	10	8.0	220	44	62	26	21	135
6	48	50	39	28	10	8.0	240	47	76	24	32	104
7	49	49	39	27	10	8.0	230	50	481	23	44	86
8	49	49	38	25	10	8.0	210	63	549	23	44	74
9	49	48	38	23	10	8.0	190	66	397	24	54	61
10	49	48	38	21	9.0	9.0	170	58	260	24	84	55
11	50	47	38	18	9.0	9.0	142	51	167	23	81	51
12	51	46	38	16	9.0	10	124	50	116	19	92	50
13	49	45	38	16	9.0	10	112	44	90	19	94	46
14	51	44	38	16	9.0	10	98	33	80	20	84	44
15	53	43	38	15	9.0	15	90	28	76	16	66	41
16	53	42	38	15	9.0	30	86	26	70	16	71	38
17	53	42	38	15	9.0	80	81	28	74	14	92	36
18	52	41	38	14	9.0	100	76	32	1210	17	98	36
19	53	41	38	14	9.0	120	72	31	558	25	81	36
20	54	40	38	14	9.0	150	68	31	278	29	78	36
21	54	40	37	13	8.0	170	66	30	167	36	76	36
22	51	40	37	13	8.0	160	62	30	114	46	66	36
23	51	39	37	13	8.0	150	59	29	82	53	66	36
24	53	39	36	12	8.0	145	56	28	65	60	63	36
25	56	39	36	12	8.0	140	56	28	55	65	65	39
26	56	39	36	12	8.0	135	53	28	49	61	67	39
27	56	39	35	12	8.0	130	47	31	39	58	88	39
28	55	39	34	11	8.0	130	44	34	32	44	98	38
29	55	39	34	11	8.0	140	40	32	29	32	116	36
30	54	39	33	11	---	150	34	40	31	27	140	36
31	52	---	32	10	---	160	---	42	---	20	359	---
TOTAL	1620	1317	1154	557	261.0	2225.0	3466	1153	5400	969	2384	2281
MEAN	52.3	43.9	37.2	18.0	9.00	71.8	116	37.2	180	31.3	76.9	76.0
MAX	56	50	39	31	10	170	240	66	1210	65	359	305
MIN	48	39	32	10	8.0	8.0	34	26	29	14	14	36
AC-FT	3210	2610	2290	1100	518	4410	6870	2290	10710	1920	4730	4520

CAL YR 1979 TOTAL 133344.0 MEAN 365 MAX 7420 MIN 28 AC-FT 264500
WTR YR 1980 TOTAL 22787.0 MEAN 62.3 MAX 1210 MIN 8.0 AC-FT 45200

06349000 HEART RIVER NEAR MANDAN, ND--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-50, 1971-76, 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1978 to current year.
WATER TEMPERATURES: January 1978 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,300 micromhos Feb. 3, 1980; minimum daily, 390 micromhos Mar. 28, 1978.
WATER TEMPERATURES: Maximum daily, 33.0°C July 22, 1979; 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,300 micromhos Feb. 3; minimum daily, 530 micromhos June 19.
WATER TEMPERATURES: Maximum daily, 32.5°C July 10; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 24...	1040	52	1440	8.5	12.0	4.0	2.3	12.2	--	--	32	65
NOV 28...	1250	39	1800	8.3	-6.5	.0	2.5	13.3	--	--	K17	K12
DEC 18...	1240	38	1840	8.1	14.0	.5	1.4	13.1	--	30	K4	K12
JAN 25...	1445	12	1890	7.8	-9.0	.0	1.2	4.7	--	--	K2	K15
FEB 29...	1200	8.1	1850	7.7	-18.0	.0	.50	5.2	35	--	<1	--
MAR 28...	1230	118	1000	8.2	3.0	.0	11	11.1	75	41	--	K40
APR 24...	0910	57	1440	8.5	9.5	11.0	5.5	10.2	92	15	K11	32
MAY 23...	1120	29	1620	8.3	24.0	20.5	3.9	8.5	--	29	140	240
JUN 27...	1145	41	1130	8.4	20.0	19.0	26	8.6	91	25	110	460
JUL 25...	1120	64	1320	8.5	20.5	22.0	4.6	8.3	93	33	K110	K80
AUG 28...	1120	96	1340	8.5	23.0	20.0	20	8.6	94	29	K50	K65
SEP 26...	0935	39	1420	8.5	6.0	7.5	8.9	10.6	87	11	K20	1100

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 24...	340	0	65	43	200	55	4.7	210	8.7	340	420	14
NOV 28...	460	0	90	56	270	56	5.5	280	11	500	530	16
DEC 18...	460	0	92	56	250	69	5.1	260	13	470	520	12
JAN 25...	460	0	94	54	300	58	6.1	310	8.4	510	530	19
FEB 29...	500	0	100	60	300	56	5.9	310	8.7	540	520	17
MAR 28...	190	0	38	24	150	62	4.7	150	8.3	260	260	7.1
APR 24...	310	0	59	39	230	61	5.7	130	8.4	370	390	13
MAY 23...	350	0	59	50	250	60	5.8	260	9.7	370	490	20
JUN 27...	290	0	60	34	150	52	3.8	160	11	290	310	8.7
JUL 25...	300	18	55	39	190	57	4.8	200	10	280	440	11
AUG 28...	270	0	50	35	180	58	4.8	190	9.4	280	380	9.4
SEP 26...	300	0	55	39	210	60	5.3	220	9.2	340	420	15

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06349000 HEART RIVER NEAR MANDAN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO- RIDE, TOTAL (MG/L AS F) (00951)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT												
24...	--	.3	5.7	961	961	1.31	137	--	--	.02	.04	.00
NOV												
28...	--	.5	8.1	1250	1280	1.70	132	--	--	.38	.27	.05
DEC												
18...	.4	.4	6.1	1280	1230	1.74	133	.61	.02	.63	.33	.01
JAN												
25...	--	.4	9.0	1310	1320	1.78	43.5	--	--	.13	.10	.15
FEB												
29...	--	.4	9.5	1290	1340	1.75	28.2	--	--	.28	.26	.11
MAR												
28...	.3	.3	5.5	666	651	.91	212	.22	.01	.23	.21	.10
APR												
24...	.5	.4	2.8	957	965	1.30	149	.01	.01	.00	.00	.02
MAY												
23...	.3	.4	4.5	1140	1110	1.55	92.0	.01	.01	.02	.03	.01
JUN												
27...	.4	.3	8.5	779	757	1.06	87.1	.02	.02	.00	.01	.03
JUL												
25...	1.0	.7	4.5	930	919	1.26	161	.00	.00	.00	.00	.01
AUG												
28...	1.0	.4	4.7	901	838	1.23	236	.26	.02	.28	.25	.02
SEP												
26...	.9	.4	6.1	873	959	1.19	93.6	.00	.00	.00	.00	.01

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
OCT											
24...	.01	.01	1.2	.95	1.2	.24	.96	1.2	1.0	5.4	.010
NOV											
28...	.05	.06	1.0	.62	1.1	.43	.67	1.5	.94	6.6	.010
DEC											
18...	.03	.04	.68	.59	.69	.07	.62	1.3	.95	5.8	.010
JAN											
25...	.07	.09	.36	.54	.51	.00	.61	.64	.71	2.8	.010
FEB											
29...	.10	.13	.50	.53	.61	.00	.63	.89	.89	3.9	.000
MAR											
28...	.06	.08	.90	1.0	1.0	.00	1.1	1.2	1.3	5.4	.000
APR											
24...	.02	.03	1.1	1.1	1.1	.00	1.1	1.1	1.1	4.9	.030
MAY											
23...	.01	.01	.82	.62	.83	.20	.63	.85	.66	3.8	.040
JUN											
27...	.00	.00	1.1	.82	1.1	.28	.82	1.1	.83	4.9	.210
JUL											
25...	.02	.03	1.1	.86	1.1	.22	.88	1.1	.88	4.9	.050
AUG											
28...	.00	.00	.98	.60	1.0	.40	.60	1.3	.85	5.7	.070
SEP											
26...	.00	.00	.49	.44	.50	.06	.44	.50	.44	2.2	.060

06349000 HEART RIVER NEAR MANDAN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
OCT [illegible]...	[illegible]	[illegible]	--	--	--	--	--	--	--	--	--
NOV [illegible]...	[illegible]	[illegible]	--	--	--	--	--	--	--	--	--
DEC [illegible]...	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN [illegible]...	[illegible]	[illegible]	--	--	--	--	--	--	--	--	--
FEB [illegible]...	[illegible]	[illegible]	--	--	--	--	--	--	--	--	--
MAR [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	--	--	[illegible]	[illegible]
MAY [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	--	--	[illegible]	--
JUN [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	--	--	[illegible]	[illegible]
AUG [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	--	--	[illegible]	[illegible]
SEP [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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06349000 HEART RIVER NEAR MANDAN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)
OCT [illegible]...	--	--	--	--	--	--	--	--	--	--
NOV [illegible]...	--	--	--	--	--	--	--	--	--	--
DEC 19...	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN [illegible]...	--	--	--	--	--	--	--	--	--	--
FEB [illegible]...	--	--	--	--	--	--	--	--	--	--
MAR [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR [illegible]...	--	[illegible]	--	--	[illegible]	[illegible]	--	--	[illegible]	--
MAY [illegible]...	--	[illegible]	--	--	[illegible]	[illegible]	--	--	[illegible]	--
JUN [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL [illegible]...	--	[illegible]	--	--	[illegible]	[illegible]	--	--	[illegible]	--
AUG [illegible]...	--	[illegible]	--	--	[illegible]	[illegible]	--	--	[illegible]	--
SEP [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCT [illegible]...	--	[illegible]	--	--	--	--	--	[illegible]	--	--
NOV [illegible]...	--	--	--	--	--	--	--	[illegible]	--	--
DEC [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]
JAN [illegible]...	--	[illegible]	--	--	--	--	--	--	--	--
FEB [illegible]...	--	--	--	--	--	--	--	[illegible]	--	--
MAR [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
APR [illegible]...	--	[illegible]	--	--	[illegible]	--	--	[illegible]	--	--
MAY [illegible]...	--	[illegible]	--	--	[illegible]	--	--	[illegible]	--	--
JUN [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]
JUL [illegible]...	--	[illegible]	--	--	[illegible]	--	--	[illegible]	--	--
AUG [illegible]...	--	[illegible]	--	--	[illegible]	--	--	[illegible]	--	--
SEP [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]

06349000 HEART RIVER NEAR MANDAN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHYTO-PLANKTON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00028)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT [illegible]...	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NOV [illegible]...	[illegible]	--	--	--	--	--	[illegible]	[illegible]	[illegible]
DEC [illegible]...	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN [illegible]...	--	--	--	--	--	--	[illegible]	[illegible]	[illegible]
FEB [illegible]...	--	--	--	--	--	--	[illegible]	[illegible]	[illegible]
MAR [illegible]...	[illegible]	--	--	--	--	--	[illegible]	[illegible]	[illegible]
APR [illegible]...	--	--	--	--	--	--	[illegible]	[illegible]	[illegible]
MAY [illegible]...	[illegible]	--	--	--	--	--	[illegible]	[illegible]	[illegible]
JUN [illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL [illegible]...	[illegible]	--	--	--	--	--	[illegible]	[illegible]	[illegible]
AUG [illegible]...	[illegible]	--	--	--	--	--	[illegible]	[illegible]	[illegible]
SEP [illegible]...	[illegible]	--	--	--	--	--	[illegible]	[illegible]	[illegible]

DISSOLVED OXYGEN AND WATER TEMPERATURE PROFILE, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

[illegible]

06349000 HEART RIVER NEAR MANDAN, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1680	[illegible]	1600	1630	2200	1950	810	1500	1620	1400	1590	1050
2	1610	[illegible]	1600	1700	2250	2100	835	1600	1680	1400	1510	960
3	1620	[illegible]	1650	1800	2300	2060	800	1620	1690	1400	1650	820
4	1620	[illegible]	1680	1820	2280	2050	800	1610	1670	1450	1680	860
5	1610	[illegible]	1500	1820	2260	2020	780	1700	1350	1500	1770	900
6	1670	[illegible]	1620	1820	2150	2100	800	1510	1340	1500	1690	950
7	1660	[illegible]	1440	1850	2150	2100	810	1400	1200	1500	1500	1000
8	1660	[illegible]	1340	1900	2150	2060	900	1390	1120	1480	1440	1010
9	1610	[illegible]	1350	1900	2080	2020	990	1380	1130	1540	1360	1100
10	1650	[illegible]	1350	1950	2050	1980	900	1450	---	1600	1280	1170
11	1500	[illegible]	1360	2000	2000	2000	950	1410	---	1600	1270	1200
12	1600	[illegible]	1380	2020	2070	2030	1010	1410	1130	1590	1330	1200
13	1600	[illegible]	1380	2100	2000	2020	1160	1400	---	1590	1400	1280
14	1620	[illegible]	1420	2010	2050	2020	1120	1400	1120	1620	1500	1330
15	1600	[illegible]	1500	2040	1950	1900	1160	1500	1150	1610	1400	1350
16	1610	[illegible]	1650	2060	1800	1800	1200	1540	1180	1550	1300	1370
17	1680	[illegible]	1680	2100	2020	1600	1220	1530	1280	1600	1180	1400
18	1610	[illegible]	1700	2020	2110	1510	1300	1400	730	1600	1200	1420
19	1600	[illegible]	1700	2000	2050	1300	1360	1450	530	1500	1290	1450
20	1590	[illegible]	1620	1900	2020	1200	1380	1500	580	1480	1380	1480
21	1600	[illegible]	1590	1900	2180	1110	1400	1540	650	1400	1320	1460
22	1600	[illegible]	1700	1980	2180	1090	1190	1540	600	1520	1400	1450
23	1600	[illegible]	1650	1950	2080	1080	1220	1630	850	1460	1280	1430
24	1580	[illegible]	1600	2000	2110	1090	1250	1650	875	1330	1300	1410
25	1590	[illegible]	1610	1990	2000	1020	1260	1650	1160	1340	1300	1420
26	1590	[illegible]	1620	2000	1950	1090	1150	1600	1110	1350	1370	1460
27	1610	[illegible]	1600	2000	1900	1100	1220	1690	1180	1340	1410	1480
28	1610	[illegible]	1610	2020	1880	950	1200	1550	1250	1400	1330	1500
29	1600	[illegible]	1600	2100	1900	900	1270	1530	1300	1450	1250	1500
30	1580	[illegible]	1600	2150	---	860	1250	1500	1400	1490	1160	1520
31	1600	---	1630	2010	---	880	---	1450	---	1500	1080	---
MEAN	1610	[illegible]	1550	1960	2060	1580	1190	1520	1120	1490	1370	1260

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

06349000 HEART RIVER NEAR MANDAN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 20,79		MAR 20,80		MAY 23,80		JUN 27,80	
TIME	1250		1230		1120		1145	
TOTAL CELLS/ML	350		6600		19000		47000	
DIVERSITY: DIVISION	1.2		1.2		1.2		1.1	
.CLASS	1.2		1.3		1.2		1.1	
..ORDER	1.5		1.4		1.4		1.3	
...FAMILY	1.6		1.5		1.6		1.9	
....GENUS	2.1		1.5		2.0		3.1	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	--	67	2	--	--	680	1
...COELASTRACEAE								
....COELASTRUM	--	--	--	--	--	--	--	--
...MICRACTINIACEAE								
....GOLENKINIA	--	--	--	--	--	--	720	2
....MICRACTINIUM	--	--	--	--	160	1	--	--
...OOCYSTACEAE								
....ANKISTRODESMUS	1960	56	690	11	960	5	2600	6
....CHLORELLA	11	3	--	--	--	--	680	1
....CLOSTERIOPSIS	--	--	--	--	--	--	--	--
....DICTYOSPHAERIUM	--	--	22	1	160	1	6000	13
....KIRCHNERIELLA	20	6	--	--	--	--	--	--
....OOCYSTIS	--	--	--	--	8	1	1900	4
....SELENASTRUM	--	--	--	--	--	--	240	1
....TREUBARIA	--	--	--	--	--	--	--	--
....WESTELLA	--	--	--	--	--	--	--	--
...SCENEDESMACEAE								
....ACTINASTRUM	--	--	--	--	960	5	8600	18
....CRUCIGENIA	--	--	--	--	--	--	960	2
....SCENEDESMUS	20	6	--	--	1100	6	2900	6
....TETRASTRUM	5	1	--	--	--	--	960	2
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

06349000 HEART RIVER NEAR MANDAN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	NOV 28,79 1250		MAR 28,80 1230		MAY 23,80 1120		JUN 27,80 1145	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	830	4	--	-
....ANACYSTIS	--	-	--	-	130000	68	1200	3
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	31000	71	--	-	--	-
....SCHIZOTHRIX	660	19	--	-	--	-	--	-
...RIVULARIACEAE								
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	22	1	150	1	--	-
....TRACHELOMONAS	--	-	22	1	600	3	--	-
...PETALOMONADACEAE								
....CALYCIMONAS	5	1	--	-	--	-	--	-

NOTE: # = DOMINANT ORGANISM, EQUAL TO OR GREATER THAN 15%
* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06349000 HEART RIVER NEAR MANDAN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUL 29,80	AUG 26,80	SEP 26,80
TIME	1120	1120	0935
TOTAL CELLS/ML	11000	16000	2600
DIVERSITY: DIVISION	1.0	1.5	1.6
.CLASS	1.0	1.5	1.6
..ORDER	2.5	2.3	1.9
...FAMILY	3.1	2.9	2.6
....GENUS	3.5	3.3	3.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

06349000 HEART RIVER NEAR MANDAN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	JUL 25,80 1120		AUG 28,80 1120		SEP 26,80 0935	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	800	7	--	*	--	*
....ANACYSTIS	800	7	2700#	17	7100#	27
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	750	7	2400	15	--	*
....SCHIZOTHRIX	--	*	--	*	--	*
...RIVULARIACEAE						
....RAPHIDIOPSIS	1400	12	--	*	--	*
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	*	--	*	26	1
....TRACHELOMONAS	--	*	8	0	26	1
...PETALOMONADACEAE						
....CALYCOMONAS	--	*	--	*	--	*

NOTE: # = DOMINANT ORGANISM, EQUAL TO OR GREATER THAN 15%
* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06349070 MISSOURI RIVER BELOW MANDAN, ND

LOCATION.--Lat 46°44'32", long 100°49'54", at midsection of west half sec.30, T.138 N., R.80 W., Morton County, Hydrologic Unit 10130102, on right bank 1 mi (2 km) south of Fort Lincoln State Park, 6 mi (10 km) southeast of Mandan, and at mile 1,309 (2,106 km).

DRAINAGE AREA.--189,800 mi² (491,600 km²), approximately.

PERIOD OF RECORD.--September 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft (487.680 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Stage regulated by Lake Sakakawea (station 06338000).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 29.71 ft (9.056 m) Mar. 17, 1972; minimum daily recorded, 17.40 ft (5.304 m) Apr. 1, 1968.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	---	[illegible]		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	---	[illegible]		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	---	[illegible]		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	---	[illegible]		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	---	[illegible]		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	---	[illegible]		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	---	[illegible]	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	---	[illegible]	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	---	[illegible]	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	---	[illegible]	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	---	[illegible]	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	---	[illegible]	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	---	[illegible]	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	---	[illegible]	---		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	---	[illegible]	---		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	---	[illegible]	---		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	---	[illegible]	---		[illegible]	---	[illegible]	---	[illegible]	[illegible]	---
TOTAL	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	---	---	---		---	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

06349500 APPLE CREEK NEAR MENOKEN, ND

LOCATION.--Lat 46°47'40", long 100°39'25", in NW¼NE¼ sec.9, T.138 N., R.79 W., Burleigh County, Hydrologic Unit 10130103, on left bank 75 ft (23 m) downstream from bridge on county highway, 4 mi (6 km) upstream from Hay Creek, 6.3 mi (10.1 km) west of Menoken, and 6.4 mi (10.3 km) east of Bismarck.

DRAINAGE AREA.--1,680 mi² (4,350 km²), approximately, of which about 500 mi² (1,300 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to June 1905, October 1945 to current year. Published as "near Bismarck" 1905.

REVISED RECORDS.--WSP 1209: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,638.61 ft (499.449 m) National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to Sept. 30, 1953.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--35 years, 33.8 ft³/s (0.957 m³/s), 24,490 acre-ft/yr (30.2 hm³/yr); median of yearly mean discharges, 19 ft³/s (0.54 m³/s), 13,800 acre-ft/yr (17 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,750 ft³/s (191 m³/s) Apr. 16, 1950, gage height, 17.07 ft (5.203 m); maximum gage height, 17.46 ft (5.322 m) Apr. 19, 1979; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 118 ft³/s (3.34 m³/s) Mar. 29, gage height, 6.15 ft (1.875 m), no peak above base of 200 ft³/s (5.66 m³/s); minimum daily, 0.05 ft³/s (0.001 m³/s) July 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]
[illegible]

05349500 APPLE CREEK NEAR MENOKEN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT											
[illegible]...	[illegible]	.09	1600	8.4	6.5	45	5.2	10.6	81	260	0
NOV											
[illegible]...	[illegible]	[illegible]	1660	8.0	2.0	35	5.0	9.5	74	320	0
DEC											
[illegible]...	[illegible]	1.3	1850	8.0	1.0	35	2.5	10.5	--	360	0
JAN											
[illegible]...	[illegible]	.90	2100	7.5	.0	40	2.1	7.9	53	460	0
FEB											
[illegible]...	[illegible]	1.0	2000	7.9	.0	80	1.7	7.6	52	490	0
MAR											
[illegible]...	[illegible]	[illegible]	1050	--	.5	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	100	--	.5	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	[illegible]	7.7	.9	55	12	10.7	76	130	1
MAY											
[illegible]...	[illegible]	1.6	1000	8.2	16.0	40	15	5.5	52	230	0
[illegible]...	[illegible]	.67	[illegible]	8.4	19.5	40	8.2	6.7	69	260	0
JUN											
[illegible]...	[illegible]	[illegible]	[illegible]	8.3	20.5	40	12	6.6	73	270	0
JUL											
[illegible]...	[illegible]	[illegible]	1600	8.8	21.0	50	22	6.2	72	[illegible]	0
AUG											
[illegible]...	[illegible]	[illegible]	[illegible]	8.5	19.0	50	13	8.2	--	160	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) [illegible]	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) [illegible]	[illegible]	SODIUM PERCENT [illegible]	SODIUM AD-SORP-TION RATIO [illegible]	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) [illegible]	POTAS-SIUM, DIS-SOLVED (MG/L AS K) [illegible]	ALKA-LINITY (MG/L AS CACO3) [illegible]	SULFATE DIS-SOLVED (MG/L AS SO4) [illegible]	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) [illegible]	FLUO-RIDE, DIS-SOLVED (MG/L AS F) [illegible]
OCT											
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NOV											
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DEC											
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN											
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FEB											
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR											
[illegible]...	--	--	--	--	--	--	--	--	--	--	--
[illegible]...	--	--	--	--	--	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY											
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUN											
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL											
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG											
[illegible]...	[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

06349500 APPLE CREEK NEAR MENOKEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT											
25...	8.5	985	991	1.34	2.63	.03	.13	.00	.00	.02	.03
NOV											
30...	6.3	1090	1090	1.48	3.03	.06	.27	.01	.03	.06	.07
DEC											
31...	5.1	1240	1220	1.69	6.65	.02	.09	.00	.01	.02	.02
JAN											
31...	12	1410	1390	1.92	3.73	--	--	--	--	--	--
FEB											
22...	26	1390	1410	1.89	3.91	.06	.27	.00	.00	.09	.06
MAR											
18...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
27...	6.9	392	338	.53	20.6	.72	3.2	.03	.11	1.1	.75
MAY											
07...	7.3	700	699	.95	2.06	.02	.09	.00	.00	.00	.02
08...	9.8	867	873	1.18	1.57	.00	.00	.00	.00	.00	.00
JUN											
27...	19	1010	1000	1.37	.91	.10	.44	.00	.00	.02	.10
JUL											
30...	13	1070	1080	E1.46	6.23	.00	.00	.00	.00	.03	.00
AUG											
28...	8.7	727	691	0.99	13.93	.00	.00	.00	.00	.00	.00

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCT										
25...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NOV										
30...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DEC										
31...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN										
31...	--	--	--	--	--	--	--	--	--	--
FEB										
22...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR										
18...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
27...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY										
07...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
08...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUN										
27...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL										
30...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG										
28...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

E [illegible]

06349500 APPLE CREEK NEAR MENOKEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT						
25...	.250	.18	.55	1100	20	40
NOV						
30...	.210	.12	.37	1100	20	40
DEC						
31...	.250	.16	.49	1200	20	40
JAN						
31...	--	--	--	1300	50	180
FEB						
22...	.160	.13	.40	1300	70	190
MAR						
27...	.340	.23	.71	290	290	150
MAY						
07...	.120	.11	.34	570	20	100
30...	.400	.19	.58	770	10	70
JUN						
27...	.820	.72	2.2	1100	<10	10
JUL						
30...	.900	.61	1.9	1300	10	50
AUG						
29...	.680	.59	1.8	650	30	60

DATE	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT		
25...	10	.09
NOV		
30...	6	.06
DEC		
31...	8	.03
JAN		
31...	6	.02
FEB		
22...	88	.20
MAR		
27...	126	1.0
MAY		
07...	28	.11
30...	90	.09
JUN		
27...	56	.03
JUL		
30...	37	.01
AUG		
29...	[illegible]	[illegible]

06349700 MISSOURI RIVER NEAR SCHMIDT, ND

LOCATION.--Lat 46°35'22", long 100°44'10", in SW¼SE¼ sec.35, T.137 N., R.80 W., Morton County, Hydrologic Unit 10130102, on right bank 3 mi (5 km) southeast of abandoned townsite of Schmidt, 15 mi (24 km) southeast of Mandan, and at mile 1,298 (2,088 km).

DRAINAGE AREA.--191,700 mi² (496,500 km²), approximately.

PERIOD OF RECORD.--September 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft (487.680 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Stage regulated by Lake Sakakawea (station 06338490).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 25.52 ft (7.778 m) Dec. 8, 1979; minimum daily recorded, 7.62 ft (2.323 m) May 30, 1967.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	----	----	[illegible]	[illegible]	[illegible]	----	[illegible]			----	[illegible]	[illegible]
2	----	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
3	----	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
4	----	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
5	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
6	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
7	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
8	[illegible]	----	[illegible]	----	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
9	[illegible]	----	[illegible]	----	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
10	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
11	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
12	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
13	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
14	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
15	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
16	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
17	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
18	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			----	[illegible]	[illegible]
19	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	----			----	[illegible]	[illegible]
20	[illegible]	----	[illegible]	[illegible]	[illegible]	[illegible]	----			----	[illegible]	[illegible]
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	----			----	[illegible]	[illegible]
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	----			----	[illegible]	[illegible]
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	----			----	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	----			----	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	----			[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	----			[illegible]	[illegible]	[illegible]
27	----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	----			[illegible]	[illegible]	[illegible]
28	----	[illegible]	[illegible]	----	[illegible]	[illegible]	----			[illegible]	[illegible]	[illegible]
29	----	[illegible]	[illegible]	----	----	[illegible]	----			[illegible]	[illegible]	[illegible]
30	----	[illegible]	[illegible]	[illegible]	----	[illegible]	----			[illegible]	[illegible]	[illegible]
31	----	----	[illegible]	[illegible]	----	[illegible]	----			[illegible]	[illegible]	----
TOTAL	----	----	[illegible]	----	----	----	----	----	----	----	[illegible]	[illegible]
MEAN	----	----	[illegible]	----	----	----	----	----	----	----	[illegible]	[illegible]
MAX	----	----	[illegible]	----	----	----	----	----	----	----	[illegible]	[illegible]
MIN	----	----	[illegible]	----	----	----	----	----	----	----	[illegible]	[illegible]

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND

LOCATION.--Lat 46°32'35", long 102°53'16", in SW¼SE¼SE¼ sec.32, T.136 N., R.97 W., Hettinger County, Hydrologic Unit 10130204, on left bank 70 ft (21 m) upstream from bridge on county road, 1.0 mi (1.6 km) west of New England, 0.3 mi (0.5 km) above Coon Creek and 17 mi (27 km) below confluence of North Fork Cannonball River and Philbrick Creek.

DRAINAGE AREA.--285 mi² (738 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,560 ft (780 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,450 ft³/s (41.1 m³/s) Apr. 10, 1979, gage height, 10.50 ft (3.200 m), backwater from ice; no flow for parts of several days in October 1980 when water was being pumped from gage pool.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15 ft³/s (0.42 m³/s) Mar. 22, gage height, 2.60 ft (0.792 m), no peak above base of 150 ft³/s (4.25 m³/s); no flow for part of Oct. 16, 17, 27 and 28 when water was being pumped from gage pool; minimum daily discharge, 0.01 ft³/s (>0.001 m³/s) Sept. 2-5, 8-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.06	.03	.07	.05	.07	7.3	.54	.13	.06	.12	.02
2	.06	.06	.04	.05	.06	.06	7.0	.49	.13	.05	.12	.01
3	.06	.06	.06	.05	.07	.04	6.7	.37	.14	.25	.12	.01
4	.06	.06	.08	.05	.08	.03	6.7	.30	.12	.29	.12	.01
5	.06	.09	.07	.06	.08	.03	6.7	.27	.11	.12	.12	.01
6	.06	.09	.06	.06	.08	.04	6.7	.25	.09	.12	.11	.02
7	.09	.06	.05	.05	.07	.05	6.3	.19	.11	.12	.07	.02
8	.11	.06	.06	.03	.06	.05	5.1	.16	.66	.11	.09	.01
9	.11	.06	.07	.02	.06	.05	4.0	.15	.25	.10	.06	.01
10	.13	.06	.08	.03	.05	.04	3.5	.14	.22	.06	.06	.01
11	.10	.06	.08	.05	.05	.04	3.1	.12	.19	.06	.06	.01
12	.06	.06	.07	.07	.05	.03	2.5	.12	.33	.06	.06	.01
13	.09	.06	.07	.08	.04	.03	2.3	.12	.27	.06	.05	.01
14	.09	.06	.06	.09	.04	.20	2.3	.12	.18	.07	.06	.01
15	.14	.09	.05	.09	.04	.23	2.7	.12	.13	.07	.06	.01
16	.09	.09	.02	.08	.05	.25	2.5	.12	.14	.07	.13	.01
17	.06	.09	.03	.08	.06	.10	1.9	.12	.14	.07	.13	.01
18	.11	.09	.07	.08	.08	1.0	1.6	.12	.37	.07	.12	.01
19	.20	.09	.07	.08	.08	6.0	1.3	.12	.22	.09	.12	.02
20	.25	.06	.06	.08	.07	5.0	1.4	.12	.20	.10	.10	.02
21	.20	.06	.05	.07	.07	9.0	1.2	.12	.16	.09	.07	.02
22	.20	.03	.04	.07	.06	13	.98	.12	.13	.09	.06	.02
23	.22	.03	.04	.07	.06	13	.79	.12	.12	.10	.06	.02
24	.13	.03	.05	.07	.05	12	.79	.11	.11	.11	.06	.03
25	.11	.03	.06	.07	.06	12	.72	.12	.11	.11	.07	.03
26	.17	.02	.07	.06	.07	11	.54	.11	.11	.11	.04	.03
27	.13	.02	.07	.05	.08	9.0	.45	.11	.10	.10	.03	.03
28	.05	.02	.07	.04	.08	8.4	.41	.11	.10	.09	.03	.03
29	.06	.02	.07	.03	.08	8.1	.43	.10	.09	.11	.04	.04
30	.06	.02	.07	.04	---	8.1	.45	.10	.10	.12	.03	.02
31	.09	---	.07	.04	---	7.9	---	.11	---	.12	.03	---
TOTAL	3.41	1.69	1.84	1.86	1.83	124.04	88.36	5.29	5.26	3.15	2.40	.52
MEAN	.11	.056	.059	.060	.063	4.03	2.95	.17	.18	.10	.077	.017
MAX	.25	.09	.08	.09	.08	13	7.3	.54	.66	.29	.13	.04
MIN	.05	.02	.02	.02	.04	.03	.41	.10	.09	.05	.03	.01
AC-FT	6.8	3.4	3.6	3.7	3.6	248	175	10	10	6.2	4.8	1.0

CAL YR 1979 TOTAL 10028.60 MEAN 27.5 MAX 1300 MIN .02 AC-FT 19890
WTR YR 1980 TOTAL 240.45 MEAN .66 MAX 13 MIN .01 AC-FT 477

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
02...	0835	.05	2350	8.4	15.0	10.5	10.0	99	400	670	360	0
NOV												
08...	1415	.06	2590	8.2	1.5	3.5	12.4	101	K9	380	610	120
DEC												
13...	1010	.07	2900	7.6	-6.0	1.5	10.0	77	K8	71	660	130
JAN												
16...	1105	.08	2930	7.7	3.0	1.0	7.3	55	K1	--	660	64
FEB												
12...	0900	.05	2930	7.7	-11.0	.0	6.4	48	<1	K12	630	0
MAR												
13...	1015	.03	--	--	4.0	2.5	--	--	--	--	--	--
22...	0930	13	--	--	-2.0	.0	--	--	--	--	--	--
24...	1250	11	3780	8.4	7.5	1.0	13.3	102	<1	71	710	110
APR												
22...	0900	1.0	2300	8.2	14.5	14.5	--	--	70	74	470	150
MAY												
07...	0925	.21	2340	8.2	3.0	12.5	7.5	77	K740	400	480	100
JUN												
04...	0840	.12	2440	8.3	18.0	18.0	7.3	85	--	--	490	39
JUL												
09...	1635	.10	2240	8.6	32.0	23.0	14.8	185	1100	860	400	0
AUG												
12...	1330	.06	2000	8.1	25.5	20.5	9.4	112	K2000	4000	380	0
20...	1430	.10	--	--	17.0	18.0	--	--	--	--	--	--
SEP												
04...	1445	.01	1830	8.5	75.0	19.0	12.0	141	480	380	310	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
02...	62	49	420	85	9.7	9.9	571	7	480	3.7	760	7.6
NOV												
08...	94	91	460	62	8.1	10	600	0	492	6.1	1000	8.6
DEC												
13...	98	100	480	60	8.2	10	647	0	530	26	1100	9.2
JAN												
16...	110	94	480	78	8.1	11	727	0	596	23	1100	17
FEB												
12...	110	87	470	61	8.1	10	788	0	646	25	1000	10
MAR												
13...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
24...	103	110	750	69	14	13	703	14	600	4.7	1600	12
APR												
22...	78	67	360	62	7.2	8.4	395	0	324	4.0	890	8.1
MAY												
07...	81	67	410	65	9.3	9.5	461	0	378	4.7	900	8.9
JUN												
04...	87	67	420	64	8.2	10	550	0	451	4.4	920	7.5
JUL												
09...	63	58	380	67	9.5	11	544	20	480	2.4	760	6.0
AUG												
12...	57	57	350	66	7.8	11	588	0	482	7.5	630	5.7
20...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	50	45	320	68	7.9	9.8	520	12	446	2.8	560	2.7

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
02...	.5	10	1700	1630	2.31	.23	.03	--	.05	.06	.88	.93
NOV												
08...	.4	5.5	1950	1970	2.65	.32	.01	.00	.03	.04	.61	.64
DEC												
13...	.4	5.9	2140	2120	2.91	.40	.08	.05	.06	.07	.71	.77
JAN												
16...	.4	8.2	2180	2180	2.96	.47	.04	.03	.19	.23	1.0	1.2
FEB												
12...	.3	9.7	2160	2090	2.94	.29	.03	.03	.20	.24	.75	.95
MAR												
13...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
24...	.7	6.8	2900	2960	3.94	86.1	.62	.58	.19	.23	1.6	1.8
APR												
22...	.4	2.9	1700	1610	2.31	4.64	.01	.04	.03	.04	.97	1.0
MAY												
07...	.4	4.1	1800	1710	2.45	1.02	.01	.02	.10	.12	1.4	1.5
JUN												
04...	.4	6.6	1730	1790	2.35	.56	.02	.01	.04	.05	.86	.90
JUL												
09...	.7	10	1580	1580	2.15	.43	.00	.00	.01	.01	.99	1.0
AUG												
12...	.3	6.8	1410	1410	1.92	.23	.00	.00	.00	.00	1.5	1.5
20...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	.4	9.1	1240	1270	1.69	.03	.00	.00	.02	.02	.83	.85

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT											
02...	.96	4.3	.050	.15	.000	--	--	--	--	--	--
NOV											
08...	.65	2.9	.010	.03	.010	--	--	--	--	--	--
DEC											
13...	.85	3.8	.010	.03	.000	--	--	--	--	--	--
JAN											
16...	1.2	5.5	.010	.03	.010	--	--	--	--	--	--
FEB											
12...	.98	4.3	.040	.12	.010	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
24...	2.4	11	.160	.49	.050	10	3	2	100	200	200
APR											
22...	1.0	4.5	.070	.21	.020	--	--	--	--	--	--
MAY											
07...	1.5	6.7	.060	.18	.020	20	--	--	--	--	--
JUN											
04...	.92	4.1	.060	.18	.010	--	--	--	--	--	--
JUL											
09...	1.0	4.4	.100	.31	.030	10	3	0	130	0	0
AUG											
12...	1.5	6.6	.080	.25	.020	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	.85	3.8	.060	.18	.010	--	--	--	--	--	--

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, SUS- PENDED RECOV. (UG/L AS BE) (01011)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BERYL- LIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01013)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, SUS- PENDED RECOV. (UG/L AS CR) (01031)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)
OCT											
02...	--	--	--	--	--	--	640	--	--	--	--
NOV											
08...	--	--	--	--	--	--	630	--	--	--	--
DEC											
13...	--	--	--	--	--	--	630	--	--	--	--
JAN											
16...	--	--	--	--	--	--	720	--	--	--	--
FEB											
12...	--	--	--	--	--	--	680	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
24...	50	110	0	0	<3	1	680	0	0	0	7
APR											
22...	--	--	--	--	--	--	430	--	--	--	--
MAY											
07...	50	--	--	--	<3	--	520	--	--	0	--
JUN											
04...	--	--	--	--	--	--	610	--	--	--	--
JUL											
09...	50	7600	0	--	<3	1	690	10	10	0	7
AUG											
12...	--	--	--	--	--	--	630	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	--	--	--	--	--	--	630	--	--	--	--

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, SUS- PENDED RECOV- ERABLE (UG/L AS CO) (01036)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01038)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU) (01041)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM SUS- PENDED RECOV- ERABLE (UG/L AS LI) (01131)
OCT											
02...	--	--	--	--	--	--	--	--	0	--	--
NOV											
08...	--	--	--	--	--	--	--	--	10	--	--
DEC											
13...	--	--	--	--	--	--	--	--	60	--	--
JAN											
16...	--	--	--	--	--	--	--	--	380	--	--
FEB											
12...	--	--	--	--	--	--	--	--	70	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
24...	2	0	<8	40	6	0	<25	16	65	60	0
APR											
22...	--	--	--	--	--	--	--	--	40	--	--
MAY											
07...	--	--	<8	--	--	--	<25	--	<25	--	--
JUN											
04...	--	--	--	--	--	--	--	--	30	--	--
JUL											
09...	1	--	<8	30	2	2	0	16	320	60	10
AUG											
12...	--	--	--	--	--	--	35	--	40	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	--	--	--	--	--	--	23	--	<10	--	--

06349000 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
OCT											
02...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
13...	--	--	--	--	--	--	--	--	--	--	--
JAN											
16...	--	--	--	--	--	--	--	--	--	--	--
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
24...	70	510	0	530	.1	.0	.1	.02	5	0	<25
APR											
22...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	47	--	--	420	--	.1	--	--	--	--	<25
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	50	390	200	190	.2	.1	.1	.04	6	0	28
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
OCT											
02...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
13...	--	--	--	--	--	--	--	--	--	--	--
JAN											
16...	--	--	--	--	--	--	--	--	--	--	--
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
24...	0	9	3	6	40	1	0	1	0	1400	<8.0
APR											
22...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	4	--	--	--	0	--	1100	<8.0
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	0	3	0	3	40	0	0	0	1	1100	<8.0
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP, TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP, TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT							
02...	--	--	--	--	2.8	101	.01
NOV							
08...	--	--	--	12	.2	25	.00
DEC							
13...	--	--	--	19	.5	62	.01
JAN							
16...	--	--	--	28	--	46	.01
FEB							
12...	--	--	--	9.9	.5	41	.01
MAR							
13...	--	--	--	--	--	65	.01
22...	--	--	--	--	--	24	.04
24...	2.5	22	2.6	28	1.2	115	3.4
APR							
22...	--	--	--	16	.5	55	.15
MAY							
07...	--	--	--	23	--	46	.03
JUN							
04...	--	--	--	14	1.9	35	.01
JUL							
09...	1.3	<11	1.3	24	--	38	.01
AUG							
12...	--	--	--	27	2.0	90	.01
SEP							
04...	--	--	--	13	.3	36	.00

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP, TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
MAR							
13...	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--
24...	20	10	8	34	<40	<.4	22
APR							
22...	--	--	--	--	--	--	--
MAY							
07...	--	--	<8	--	--	--	--
JUN							
04...	--	--	--	--	--	--	--
JUL							
09...	20	10	8	34	<24	.7	<12
AUG							
12...	--	--	--	--	--	--	--
SEP							
04...	--	--	--	--	--	--	--

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
OCT					
02...	20	3.94	.990	12.6	15.4
AUG					
12...	34	4.79	.630	18.1	23.2
SEP					
04...	22	2.07	.520	6.22	8.03

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 2,79		NOV 8,79		DEC 13,79		JAN 16,80		FEB 12,80		MAR 24,80	
TIME	0835		1415		1010		1105		0900		1250	
TOTAL CELLS/ML	8800		1400		1500		1200		1700		3700	
DIVERSITY: DIVISION	1.9		1.9		1.6		2.2		0.9		2.3	
.CLASS	1.9		1.9		1.6		2.2		1.0		2.3	
..ORDER	2.0		2.1		1.7		2.4		1.2		2.7	
...FAMILY	2.6		2.3		2.1		2.6		1.2		2.8	
....GENUS	2.7		2.5		2.4		2.8		1.2		3.0	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	980	11	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	120	1	69	5	160	11	270#	22	400#	24	960#	26
....CHLORELLA	--	-	--	-	260#	18	79	7	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	58	1	--	-	12	1	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	460	5	260#	19	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	96	7	49	3	16	1	--	-	58	2
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	12	1	8	1	130	8	230	6
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	230	3	110	8	25	2	95	8	--	-	790#	21
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	29	1
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	--	-	--	-	--	-
....RHOPALODIA	58	1	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	27	2	120	8	55	5	--	-	--	-
...FRAGILARIACEAE												
....ASTERIONELLA	--	-	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	16	1	--	-	--	-
...NAVICULACEAE												
....NAVICULA	290	3	--	-	12	1	8	1	--	-	--	-
....PLEUROSIGMA	120	1	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	460	5	82	6	98	7	24	2	17	1	29	1
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	1100#	67	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	58	2
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	63	5	--	-	170	5

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	OCT 2,79		NOV 8,79		DEC 13,79		JAN 16,80		FEB 12,80		MAR 24,80	
TIME	0835		1415		1010		1105		0900		1250	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-	29	1
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	1000	12	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	510#	37	--	-	--	-	--	-	640#	17
....SCHIZOTHRIX	1500#	17	--	-	--	-	330#	27	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	120	3
....PHACUS	--	-	--	-	--	-	--	-	--	-	87	2
....TRACHELOMONAS	3500#	39	230#	17	690#	47	240#	20	--	-	87	2
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	380	10
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	25	2	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 22,80	MAY 7,80	JUN 4,80	JUL 9,80	AUG 12,80	SEP 4,80
TIME	0900	0925	0840	1635	1330	1445
TOTAL CELLS/ML	720	4500	150000	35000	130000	45000
DIVERSITY: DIVISION	1.7	1.6	0.6	0.9	1.5	0.8
.CLASS	1.7	1.8	0.6	0.9	1.5	0.8
..ORDER	2.2	2.1	0.7	0.9	1.8	1.1
...FAMILY	2.6	2.7	0.7	1.2	2.0	1.4
....GENUS	2.7	3.3	0.8	1.7	2.3	2.2

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	68	2	--	-	--	-	--	-	--	-
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	*	0	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	170#	23	710#	16	--	-	300	1	7000	5	2000	5
....CHLORELLA	--	-	100	2	--	-	--	-	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	*	0	1600	1	--	-
....KIRCHNERIELLA	--	-	68	2	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	140	3	--	-	1500	4	*	0	--	-
....SELENASTRUM	--	-	--	-	--	-	*	0	1600	1	470	1
....TETRAEDRON	--	-	--	-	*	0	*	0	*	0	*	0
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	540	12	22000	15	24000#	69	--	-	26000#	57
....SCENEDESMUS	51	7	540	12	1800	1	1400	4	15000	12	6600	15
....TETRASTRUM	--	-	--	-	--	-	810	2	2600	2	620	1
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	*	0	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	26	4	170	4	*	0	*	0	--	-	*	0
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	51	7	68	2	--	-	*	0	64000#	49	*	0
....STEPHANODISCUS	26	4	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	34	1	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	*	0
...CYMBELLACEAE												
....CYMBELLA	13	2	--	-	--	-	--	-	--	-	--	-
....RHOPALODIA	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....ASTERIONELLA	26	4	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	*	0	*	0	--	-
...NAVICULACEAE												
....NAVICULA	--	-	68	2	--	-	--	-	--	-	--	-
....PLEUROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	77	11	140	3	--	-	*	0	*	0	470	1
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	1100#	24	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06349900 CANNONBALL RIVER AT NEW ENGLAND, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

(CONTINUED)

DATE	APR 22,80		MAY 7,80		JUN 4,80		JUL 9,80		AUG 12,80		SEP 4,80	
TIME	0900		0925		0840		1635		1330		1445	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	2600	2	2500	6
....ANACYSTIS	13	2	510	11	120000#	84	4700	14	27000#	21	3300	7
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	260#	36	--	-	--	-	--	-	6100	5	2700	6
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	100	2	--	-	*	0	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	13	2	100	2	--	-	1200	3	--	-	*	0
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06349930 COAL BANK CREEK NEAR HAVELOCK, ND

LOCATION.--Lat 46°27'50", long 102°44'20", in NW¼SW¼ sec.34, T.135 N., R.96 W., Hettinger County, Hydrologic Unit 10130204, on right bank 30 ft (90 m) downstream from bridge on county highway, and 1 mile south of Havelock.

DRAINAGE AREA.--70.0 mi² (181.3 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,505 ft (764 m), from topographic map.

REMARKS.- Records good except for winter period, which are fair.

AVERAGE DISCHARGE.--6 years, 5.48 ft³/s (0.155 m³/s), 3,970 acre-ft/yr (4.90 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,400 ft³/s (39.5 m³/s) May 9, 1975, gage height, 10.15 ft (3.094 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 53 ft³/s (1.50 m³/s) Aug. 29, gage height, 6.05 ft (1.844 m), no peak above base of 100 ft³/s (2.83 m³/s); no flow May 28, June 25 - Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.09	.07	.02	.10	.06	.12	.09	.04	.00	.00	.32
2	.06	.09	.07	.01	.11	.07	.12	.09	.05	.00	.00	.18
3	.05	.09	.08	.02	.10	.09	.12	.09	.07	.00	.00	.09
4	.04	.09	.12	.02	.11	.09	.12	.09	.06	.00	.00	.06
5	.04	.09	.11	.02	.13	.08	.12	.10	.09	.00	.00	.05
6	.04	.09	.10	.02	.13	.07	.11	.10	.10	.00	.00	.05
7	.05	.13	.09	.01	.12	.07	.12	.09	.10	.00	.00	.04
8	.05	.12	.09	.01	.12	.06	.09	.09	.09	.00	.00	.03
9	.05	.11	.10	.02	.13	.07	.10	.09	.08	.00	.00	.03
10	.05	.11	.12	.06	.12	.06	.10	.10	.07	.00	.00	.02
11	.05	.11	.06	.10	.12	.07	.09	.09	.04	.00	.00	.02
12	.05	.11	.08	.12	.12	.07	.08	.09	.03	.00	.00	.03
13	.05	.11	.10	.14	.11	.06	.08	.09	.07	.00	.00	.03
14	.06	.11	.10	.12	.10	.12	.10	.09	.07	.00	.00	.04
15	.07	.11	.09	.13	.10	.23	.15	.09	.10	.00	.00	.04
16	.07	.11	.04	.13	.11	.14	.15	.08	.10	.00	.00	.04
17	.08	.11	.03	.13	.14	.11	.12	.08	.08	.00	.00	.04
18	.08	.11	.07	.12	.13	.22	.12	.08	.07	.00	.00	.04
19	.08	.11	.06	.11	.13	.24	.11	.07	.05	.00	.00	.04
20	.08	.11	.06	.11	.13	.13	.12	.07	.05	.00	.00	.04
21	.08	.10	.06	.11	.13	.13	.12	.08	.04	.00	.00	.05
22	.08	.10	.05	.10	.13	.12	.12	.07	.04	.00	.00	.05
23	.08	.10	.05	.10	.13	.13	.11	.05	.03	.00	.00	.05
24	.09	.10	.03	.13	.13	.15	.12	.04	.02	.00	.00	.05
25	.09	.08	.03	.13	.13	.16	.12	.03	.00	.00	.00	.05
26	.09	.07	.03	.10	.11	.14	.12	.02	.00	.00	.00	.05
27	.09	.07	.03	.06	.20	.16	.14	.02	.00	.00	.00	.05
28	.09	.07	.03	.06	.14	.12	.13	.01	.00	.00	.00	.05
29	.09	.07	.03	.07	.08	.15	.13	.00	.00	.00	12	.05
30	.09	.07	.03	.07	---	.14	.10	.01	.00	.00	1.4	.05
31	.09	---	.02	.08	---	.12	---	.03	---	.00	.69	---
TOTAL	2.12	2.94	2.03	2.43	3.54	3.63	3.45	2.12	1.54	.00	14.09	1.73
MEAN	.068	.098	.065	.078	.12	.12	.12	.068	.051	.000	.45	.058
MAX	.09	.13	.12	.14	.20	.24	.15	.10	.10	.00	12	.32
MIN	.04	.07	.02	.01	.08	.06	.08	.00	.00	.00	.00	.02
AC-FT	4.2	5.8	4.0	4.8	7.0	7.2	6.8	4.2	3.1	.00	28	3.4

CAL YR 1979 TOTAL 1973.90 MEAN 5.41 MAX 300 MIN .02 AC-FT 3920
WTR YR 1980 TOTAL 39.62 MEAN .11 MAX 12 MIN .00 AC-FT 79

06349930 COAL BANK CREEK NEAR HAVELOCK, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE, WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)
OCT												
01...	1255	.06	2100	--	--	12.0	--	--	--	--	--	--
02...	1245	.06	2220	8.1	17.0	13.0	10.2	111	K10	970	500	150
NOV												
07...	1615	.09	2290	8.5	-6.0	3.0	14.0	114	<1	K6	620	270
DEC												
13...	1450	.10	2360	7.8	-1.0	2.0	13.2	102	<1	K5	810	330
JAN												
16...	1620	.13	2790	7.6	3.0	1.5	9.9	77	K1	--	980	360
FEB												
12...	1420	.12	2590	7.4	-2.0	.5	9.8	75	<1	K10	870	270
MAR												
13...	1155	.06	--	--	6.0	1.5	--	--	--	--	--	--
25...	1210	.16	1430	7.6	7.0	2.5	11.9	95	<1	21	450	140
APR												
22...	1215	.14	1240	8.1	17.5	15.0	9.3	97	35	K17	340	50
MAY												
21...	1215	.08	1690	8.9	29.0	22.5	15.2	190	150	80	370	130
JUN												
18...	0930	.07	1920	10.1	18.0	20.0	13.8	164	81	48	320	73
SEP												
04...	1145	.06	1880	8.0	22.5	16.0	6.3	70	K30	200	580	350

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT												
01...	--	--	--	--	--	--	--	--	--	--	--	--
02...	98	61	310	72	6.1	12	425	0	349	5.4	790	11
NOV												
07...	110	83	300	51	5.3	10	400	12	350	2.1	840	9.9
DEC												
13...	160	100	310	45	4.7	8.8	581	0	476	15	940	10
JAN												
16...	210	110	330	42	4.6	11	761	0	624	31	1000	11
FEB												
12...	190	97	330	45	4.9	10	737	0	604	47	940	10
MAR												
13...	--	--	--	--	--	--	--	--	--	--	--	--
25...	104	46	160	43	3.6	6.4	383	0	314	15	510	5.6
APR												
22...	74	37	160	50	3.8	5.1	354	0	290	4.5	350	5.8
MAY												
21...	45	63	250	59	5.6	4.4	235	31	245	.6	650	5.7
JUN												
18...	25	63	310	67	7.5	5.6	92	103	247	.0	730	6.3
SEP												
04...	93	85	240	47	5.0	9.1	281	0	230	4.5	820	34

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06349930 COAL BANK CREEK NEAR HAVELOCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
01...	--	--	--	--	--	--	--	--	--	--	--	--
02...	.3	1.0	1660	1490	2.26	.28	.05	--	.05	.06	1.2	1.2
NOV												
07...	.3	.2	1610	1560	2.19	.39	.02	.01	.02	.02	.55	.57
DEC												
13...	.3	5.2	--	1820	2.48	.49	.08	.05	.01	.01	.64	.65
JAN												
16...	.4	9.5	2160	2060	2.94	.76	.01	.03	.11	.13	.99	1.1
FEB												
12...	.4	13	1990	1960	2.71	.64	.02	.04	.04	.05	1.1	1.1
MAR												
13...	--	--	--	--	--	--	--	--	--	--	--	--
25...	.3	5.3	1030	1030	1.40	.48	.01	.01	.04	.05	.49	.53
APR												
22...	.3	1.5	845	809	1.15	.32	.00	.00	.01	.01	1.3	1.3
MAY												
21...	.3	.2	1200	1170	1.63	.26	.01	.02	.09	.11	.52	.61
JUN												
18...	.3	.2	1330	1290	1.81	.25	.59	.08	.03	.04	.95	.98
SEP												
04...	.3	4.7	1440	1430	1.96	.23	.00	.00	.04	.05	1.2	1.2

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)
OCT											
01...	--	--	--	--	--	--	--	--	--	--	--
02...	1.3	5.5	.040	.12	.000	--	--	--	--	--	--
NOV											
07...	.59	2.6	.010	.03	.010	--	--	--	--	--	--
DEC											
13...	.73	3.2	.020	.06	.000	--	--	--	--	--	--
JAN											
16...	1.1	4.9	.020	.06	.020	--	--	--	--	--	--
FEB											
12...	1.1	5.0	.040	.12	.010	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
25...	.54	2.4	.050	.15	.020	10	2	1	--	200	100
APR											
22...	1.3	5.8	.050	.15	.010	--	--	--	--	--	--
MAY											
21...	.62	2.7	.040	.12	.010	--	--	--	--	--	--
JUN											
18...	1.6	7.0	.060	.18	.040	--	--	--	--	--	--
SEP											
04...	1.2	5.3	.100	.31	.080	10	4	0	14	100	0

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT											
01...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	1500	--	--	--	--
NOV											
07...	--	--	--	--	--	--	1500	--	--	--	--
DEC											
13...	--	--	--	--	--	--	1300	--	--	--	--
JAN											
16...	--	--	--	--	--	--	1500	--	--	--	--
FEB											
12...	--	--	--	--	--	--	1500	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
25...	60	--	0	0	<1	--	690	0	0	0	--
APR											
22...	--	--	--	--	--	--	680	--	--	--	--
MAY											
21...	--	--	--	--	--	--	1200	--	--	--	--
JUN											
18...	--	--	--	--	--	--	1300	--	--	--	--
SEP											
04...	150	220	0	--	<1	0	1100	30	20	10	10

06349930 COAL BANK CREEK NEAR HAVELOCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT											
01...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	0	--	--
NOV											
07...	--	--	--	--	--	--	--	--	10	--	--
DEC											
13...	--	--	--	--	--	--	--	--	60	--	--
JAN											
16...	--	--	--	--	--	--	--	--	170	--	--
FEB											
12...	--	--	--	--	--	--	--	--	40	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
25...	1	0	<3	--	4	0	<10	--	23	30	0
APR											
22...	--	--	--	--	--	--	--	--	30	--	--
MAY											
21...	--	--	--	--	--	--	--	--	<10	--	--
JUN											
18...	--	--	--	--	--	--	--	--	20	--	--
SEP											
04...	0	--	<3	0	9	--	<10	33	18	50	1

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
25...	35	440	20	420	.1	.0	.1	--	0	0	<10
APR											
22...	--	--	--	--	--	--	--	--	--	--	--
MAY											
21...	--	--	--	--	--	--	--	--	--	--	--
JUN											
18...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	49	70	30	45	.0	.0	.0	.03	2	--	<10

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
OCT											
01...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
DEC											
13...	--	--	--	--	--	--	--	--	--	--	--
JAN											
16...	--	--	--	--	--	--	--	--	--	--	--
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
25...	--	4	2	2	--	1	0	1	--	2200	<6.0
APR											
22...	--	--	--	--	--	--	--	--	--	--	--
MAY											
21...	--	--	--	--	--	--	--	--	--	--	--
JUN											
18...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	0	6	3	3	30	1	0	1	1	2100	<6.0

06349930 COAL BANK CREEK NEAR HAVELOCK, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)
OCT							
02...	--	--	--	--	--	--	--
NOV							
07...	--	--	--	--	--	--	--
DEC							
13...	--	--	--	--	--	--	--
JAN							
16...	--	--	--	--	--	--	--
FEB							
12...	--	--	--	--	--	--	--
MAR							
13...	--	--	--	--	--	--	--
25...	10	7	<3	--	<14	<.4	<6.8
APR							
22...	--	--	--	--	--	--	--
MAY							
21...	--	--	--	--	--	--	--
JUN							
18...	--	--	--	--	--	--	--
SEP							
04...	40	30	8	49	<23	<.4	<10

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT							
02...	--	--	--	16	2.1	64	.01
NOV							
07...	--	--	--	24	.2	13	.00
DEC							
13...	--	--	--	26	.6	128	.03
JAN							
16...	--	--	--	19	--	187	.07
FEB							
12...	--	--	--	21	.8	65	.03
MAR							
13...	--	--	--	--	--	74	.01
25...	<.4	<7.0	<.4	12	.7	27	.01
APR							
22...	--	--	--	19	.2	34	.01
MAY							
21...	--	--	--	24	.4	11	.00
JUN							
18...	--	--	--	21	--	6	.00
SEP							
04...	.7	<9.9	.7	17	.2	10	.00

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM (80174)
SEP											
04...	49	53	56	58	59	64	70	74	76	76	100

06349930 COAL BANK CREEK NEAR HAVELOCK, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 2,79	NOV 7,79	DEC 13,79	JAN 16,80	FEB 12,80
TIME	1245	1615	1450	1620	1420
TOTAL CELLS/ML	5800	4800	970	30	13000
DIVERSITY: DIVISION	1.8	1.5	1.7	1.6	0.5
.CLASS	1.8	1.6	1.7	1.9	0.5
..ORDER	2.2	0.0	0.0	1.9	0.5
...FAMILY	2.8	0.0	0.0	1.9	0.6
....GENUS	3.2	0.0	0.0	1.9	0.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	160	3	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	82	1	150	3	37	4	10#	33	--	-
....CHLORELLA	910#	16	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	970#	20	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	130	3	9	1	--	-	100	1
...SCENEDESMACEAE										
....CRUCIGENIA	660	11	--	-	--	-	--	-	--	-
....SCENEDESMUS	250	4	--	-	--	-	--	-	--	-
..ULOTRICHALES										
...ULOTRICHACEAE										
....GEMINELLA	--	-	--	-	19	2	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	540	9	--	-	330#	34	--	-	310	2
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	210	4	--	-	47	5	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	--	-	9	1	--	-	--	-
....COCCONEIS	41	1	--	-	--	-	--	-	--	-
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....SYNEDRA	41	1	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....GYROSIGMA	--	-	*	0	--	-	--	-	--	-
....NAVICULA	82	1	--	-	--	-	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	120	2	--	-	75	8	5#	17	--	-
.CHRYSOPHYCEAE	--	-	650	14	--	-	--	-	--	-
..CHRYSOMONADALES										
...CHROMULINACEAE										
....CHRYSOCOCCUS	--	-	520	11	--	-	--	-	100	1
...OCHROMONADACEAE										
....DINOBRYON	--	-	--	-	--	-	5#	17	--	-
...SYNURACEAE										
....SYNURA	--	-	--	-	--	-	--	-	12000#	93
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE	--	-	--	-	37	4	--	-	--	-
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	10#	33	210	2
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	2400#	49	--	-	--	-	--	-
..HORMOGONALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	1000#	18	--	-	--	-	--	-	--	-
....SCHIZOTHRIX	290	5	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	*	0	--	-	--	-	--	-
....TRACHELOMONAS	1400#	24	--	-	390#	40	--	-	100	1
...PETALOMONADACEAE										
....CALYCOMONAS	--	-	--	-	9	1	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	--	-	9	1	--	-	--	-
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	100	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06349930 COAL BANK CREEK NEAR HAVELOCK, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE TIME	MAR 25,80 1210	APR 22,80 1215	MAY 21,80 1215	JUN 18,80 0930	SEP 4,80 1145
TOTAL CELLS/ML	6600	3400	510	13	570
DIVERSITY: DIVISION	1.0	1.8	0.6	0.0	1.4
.CLASS	1.0	1.8	0.6	0.0	1.4
..ORDER	1.1	1.9	0.9	0.0	1.4
...FAMILY	1.2	2.1	0.9	0.0	1.6
....GENUS	1.2	2.1	0.9	0.0	1.8

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	100	2	140	6	--	-	--	-	--	-
....CHLORELLA	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	230	7	--	-	--	-	--	-
..ULOTRICHALES										
...ULOTRICHACEAE										
....GEMINELLA	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	160	2	23	1	13	2	13#	100	13	2
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	--	-	23	1	--	-	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	13	2
...DIATOMACEAE										
....DIATOMA	57	1	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....SYNEDRA	--	-	93	3	--	-	--	-	--	-
...NAVICULACEAE										
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-
....NAVICULA	--	-	--	-	--	-	--	-	13	2
...NITZSCHIACEAE										
....NITZSCHIA	*	0	260	8	26	5	--	-	26	5
.CHRYSOPHYCEAE	--	-	--	-	--	-	--	-	--	-
..CHRYSOMONADALES										
...CHROMULINACEAE										
....CHRYSOCOCCUS	110	2	--	-	--	-	--	-	--	-
...OCHROMONADACEAE										
....DINOBRYON	--	-	--	-	--	-	--	-	--	-
...SYNURACEAE										
....SYNURA	930	14	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE	--	-	--	-	--	-	--	-	--	-
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	23	1	--	-	--	-	52	9
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	120#	20
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	1300#	38	26	5	--	-	--	-
..HORMOGONALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	5100#	78	--	-	440#	85	--	-	340#	59
....SCHIZOTHRIX	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	1300#	38	13	2	--	-	--	-
...PETALOMONADACEAE										
....CALYCOMONAS	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	57	1	--	-	--	-	--	-	--	-
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06350000 CANNONBALL RIVER AT REGENT, ND

LOCATION.--Lat 46°25'36", long 102°33'05", in NE¼NE¼ sec.13, T.134 N., R.95 W., Hettinger County, Hydrologic Unit 10130204, on right bank 400 ft (120 m) upstream from bridge on county highway, and 0.3 mi (0.5 km) north of Regent.

DRAINAGE AREA.--580 mi² (1,500 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,422.90 ft (738.500 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for the winter period, which are fair.

AVERAGE DISCHARGE.--30 years, 45.1 ft³/s (1.277 m³/s), 32,670 acre-ft/yr (40.3 hm³/yr); median of yearly mean discharges, 26 ft³/s (0.74 m³/s), 18,800 acre-ft/yr (23 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,000 ft³/s (283 m³/s) Mar. 27, 1978, gage height, 20.55 ft (6.264 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1914, 26.1 ft (7.96 m) Apr. 16, 1950, from floodmarks, discharge, 20,300 ft³/s (575 m³/s), on basis of slope-area measurement at site 4 mi (6 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,180 ft³/s (33.4 m³/s) June 5, gage height, 8.24 ft (2.512 m), only peak above base of 400 ft³/s (11.3 m³/s); minimum daily, 0.55 ft³/s (0.016 m³/s) Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	4.6	4.1	3.5	2.0	3.0	19	4.8	2.6	1.4	.92	8.2
2	3.1	4.6	4.2	3.5	2.0	3.5	19	5.0	3.7	1.3	.92	6.0
3	3.2	4.6	4.5	3.5	2.0	3.5	20	4.8	3.7	1.3	.85	4.0
4	3.2	4.6	4.6	3.0	2.5	3.0	16	5.3	3.1	1.2	.66	3.1
5	3.4	4.6	4.8	3.0	2.5	3.0	16	5.5	645	1.2	.65	2.4
6	3.5	4.6	4.8	3.0	3.0	3.0	17	5.4	145	1.1	.68	2.1
7	3.5	4.6	4.8	3.0	3.0	3.0	17	5.3	33	1.0	.55	1.9
8	3.9	4.6	4.8	2.5	3.0	3.5	16	5.2	19	.99	.65	1.9
9	3.9	4.6	4.8	2.0	3.2	4.0	16	4.6	12	.60	.65	1.6
10	3.9	4.6	4.8	2.0	3.2	4.0	18	4.6	8.5	1.0	.65	1.5
11	3.9	4.6	4.5	2.0	3.2	4.0	16	4.6	6.5	1.2	.65	1.5
12	3.9	4.6	4.5	2.0	3.2	4.0	14	4.6	4.8	.70	.76	1.7
13	3.9	4.6	4.5	2.0	3.2	4.5	13	4.2	5.5	.87	.70	1.8
14	3.9	4.6	4.5	2.2	3.0	5.0	12	4.0	5.8	.99	.70	1.8
15	3.9	4.6	4.0	2.3	2.5	5.5	11	4.0	5.8	.87	.81	1.9
16	3.9	4.6	3.5	2.5	2.5	6.0	10	4.0	6.0	.81	1.1	1.8
17	3.9	4.6	3.5	2.5	2.5	6.5	10	3.5	6.8	.76	1.4	1.8
18	3.9	4.6	4.0	2.5	3.0	9.0	8.8	3.9	7.3	.93	1.4	2.0
19	4.2	4.6	4.0	2.5	3.0	10	8.5	3.9	7.3	1.0	1.4	2.0
20	4.4	4.6	4.0	2.5	3.0	12	8.2	3.5	6.0	1.2	1.4	2.0
21	4.4	4.6	4.0	2.5	3.0	11	7.3	3.4	5.3	1.1	1.7	2.0
22	4.4	4.6	4.0	2.5	3.0	11	7.3	3.5	4.0	.93	1.9	2.0
23	4.4	4.6	4.0	2.5	3.0	14	7.1	2.9	3.1	.93	1.9	2.0
24	4.6	4.6	4.0	2.5	3.0	20	6.8	3.1	2.7	1.0	1.8	2.0
25	4.6	4.6	4.0	2.5	3.0	20	6.5	3.2	1.8	1.0	1.6	2.2
26	4.6	4.6	4.0	2.0	3.5	21	5.8	2.4	1.6	.83	1.3	2.4
27	4.6	4.6	4.0	2.0	3.5	22	5.5	2.2	1.5	.88	1.3	2.5
28	4.6	4.5	3.8	2.0	3.0	22	5.3	2.0	1.5	.85	1.3	2.6
29	4.6	4.3	3.8	2.0	3.0	21	5.5	1.7	1.4	.77	2.0	2.8
30	4.6	4.1	3.8	2.0	---	20	4.6	2.1	1.4	.82	25	2.9
31	4.6	---	3.8	2.0	---	21	---	2.2	---	.85	7.6	---
TOTAL	124.3	137.1	130.4	76.5	83.5	303.0	347.2	119.4	961.7	29.98	64.90	74.4
MEAN	4.01	4.57	4.21	2.47	2.88	9.77	11.6	3.85	32.1	.97	2.09	2.48
MAX	4.6	4.6	4.8	3.5	3.5	22	20	5.5	645	1.4	25	8.2
MIN	2.9	4.1	3.5	2.0	2.0	3.0	4.6	1.7	1.4	.60	.55	1.5
AC-FT	247	272	259	152	166	601	689	237	1910	59	129	148

CAL YR 1979 TOTAL 23151.00 MEAN 63.4 MAX 2190 MIN 2.5 AC-FT 45920
WTR YR 1980 TOTAL 2452.38 MEAN 6.70 MAX 645 MIN .55 AC-FT 486[illegible]

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-66, 1971 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
01...	1540	3.1	1880	--	20.0	15.0	--	--	--	--	--	--
03...	0900	3.1	1880	8.4	9.0	9.0	11.6	115	140	170	440	60
NOV												
07...	1315	4.6	1760	8.3	-1.5	1.5	14.2	111	94	49	430	48
08...	1040	4.6	1750	--	1.0	1.0	--	--	--	--	--	--
DEC												
04...	1025	4.6	2000	--	11.5	.5	--	--	--	--	--	--
04...	1445	4.6	1980	8.1	13.5	1.0	13.4	104	36	94	540	80
JAN												
15...	1120	2.3	2310	--	7.0	.5	--	--	--	--	--	--
17...	1130	2.5	2260	7.8	6.5	.0	9.9	73	<1	--	630	75
FEB												
12...	1000	3.2	2030	7.9	-3.0	1.0	10.4	81	<1	K7	470	0
13...	1355	3.2	2010	--	-5.0	.0	--	--	--	--	--	--
MAR												
17...	1020	6.4	1380	--	2.0	.0	--	--	--	--	--	--
25...	0835	24	1260	8.1	-.5	.5	12.7	96	K1	46	290	40
APR												
01...	1200	19	1970	--	8.0	1.5	--	--	--	--	--	--
23...	0510	7.1	2150	8.3	1.0	13.0	8.3	83	K6	29	540	180
MAY												
06...	1250	5.3	2080	--	17.0	17.0	--	--	--	--	--	--
21...	0810	4.0	1920	8.3	24.5	20.5	8.6	104	110	180	460	54
JUN												
03...	1640	3.2	1850	--	28.0	21.0	--	--	--	--	--	--
10...	1325	7.3	1620	8.5	23.0	23.0	9.0	112	K260	390	360	29
25...	1550	1.8	1730	--	32.0	28.5	--	--	--	--	--	--
JUL												
07...	1755	1.0	1920	8.5	28.0	26.0	--	--	--	--	400	11
15...	1145	.87	1900	8.2	20.0	21.0	7.3	88	K590	350	400	1
AUG												
05...	1320	.69	2050	8.6	29.0	20.5	--	--	--	--	420	31
06...	0910	.68	2010	8.6	24.5	17.5	8.6	100	200	180	420	46
20...	1205	1.4	--	--	16.0	19.0	--	--	--	--	--	--
SEP												
04...	0805	3.2	890	8.1	15.0	14.0	6.9	73	88	150	170	0
08...	1420	1.8	1390	--	19.0	19.5	--	--	--	--	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
01...	--	--	--	--	--	--	--	--	--	--	--	--
03...	79	58	270	74	5.6	8.3	449	7	380	3.0	620	9.8
NOV												
07...	82	55	250	72	5.2	5.8	466	0	382	3.7	600	10
08...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	110	65	260	51	4.9	8.2	564	0	460	7.2	630	10
JAN												
15...	--	--	--	--	--	--	--	--	--	--	--	--
17...	130	75	330	53	5.7	8.0	681	0	560	17	690	11
FEB												
12...	100	54	320	59	6.4	7.0	600	0	498	12	640	10
13...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
25...	56	36	170	55	4.9	7.4	305	0	250	3.9	420	7.4
APR												
01...	--	--	--	--	--	--	--	--	--	--	--	--
23...	100	71	300	54	5.6	8.1	439	0	360	3.5	760	10
MAY												
21...	82	62	310	59	7.1	7.5	495	0	406	4.6	650	9.4
JUN												
03...	--	--	--	--	--	--	--	--	--	--	--	--
10...	64	49	250	59	5.7	8.3	387	0	331	2.0	530	7.8
25...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
07...	59	61	310	62	6.8	6.9	472	0	387	2.4	660	14
15...	63	59	320	63	8.0	8.5	486	0	398	4.9	650	11
AUG												
05...	60	63	330	63	7.0	7.4	473	0	388	1.9	710	15
06...	65	62	350	64	7.5	9.9	432	12	374	1.8	720	12
20...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	33	21	140	63	4.7	7.8	278	0	228	3.5	260	3.8

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
01...	--	--	--	--	--	--	--	--	--	--	--	--
03...	.5	4.7	1310	1280	1.78	11.0	.02	--	.050	.06	.63	.68
NOV												
07...	.5	5.0	1260	1240	1.71	15.6	.02	.00	.030	.04	.49	.52
08...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
04...	--	--	--	--	--	--	--	--	--	--	--	--
04...	.5	6.3	1380	1370	1.88	17.1	.12	.10	.070	.08	.59	.66
JAN												
15...	--	--	--	--	--	--	--	--	--	--	--	--
17...	.6	9.6	1600	1590	2.18	10.8	.12	.12	.130	.16	.84	.97
FEB												
12...	.6	9.3	1410	1440	1.92	12.2	.13	.12	.060	.07	1.0	1.1
13...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
25...	.4	5.2	856	854	1.16	55.5	.02	.01	.030	.04	1.7	1.7
APR												
01...	--	--	--	--	--	--	--	--	--	--	--	--
23...	.5	5.1	1470	1470	2.00	28.2	.00	.03	.030	.04	.89	.92
MAY												
06...	--	--	--	--	--	--	--	--	--	--	--	--
21...	.4	7.5	1380	1380	1.88	14.9	.02	.02	.100	.12	.90	1.0
JUN												
03...	--	--	--	--	--	--	--	--	--	--	--	--
18...	.5	4.9	1130	1110	1.54	22.3	.01	.04	.040	.05	1.1	1.1
25...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
07...	.5	2.8	1390	1350	1.89	3.75	--	--	--	--	--	--
15...	.7	3.6	1390	1360	1.89	3.27	.07	.08	.150	.18	1.3	1.4
AUG												
05...	.6	3.3	1450	1430	1.97	2.70	--	--	--	--	--	--
06...	.7	2.0	1500	1450	2.04	2.75	.00	.00	.050	.06	1.2	1.2
20...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	.5	5.5	595	609	.81	5.14	.09	.00	.150	.18	1.1	1.2
08...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)
OCT											
01...	--	--	--	--	--	--	--	--	--	--	--
03...	.70	3.1	.010	.03	.000	--	--	--	--	--	--
NOV											
07...	.54	2.4	.010	.03	.000	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	.78	3.5	.010	.03	.000	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	--	--	--	--	--
17...	1.1	4.8	.010	.03	.010	--	--	--	--	--	--
FEB											
12...	1.2	5.4	.010	.03	.010	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
17...	--	--	--	--	--	--	--	--	--	--	--
25...	1.7	7.6	.060	.18	.030	10	2	1	57	200	200
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
23...	.92	4.1	.040	.12	.010	--	--	--	--	--	--
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
21...	1.0	4.5	.050	.15	.010	0	--	--	--	--	--
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
18...	1.1	4.9	.070	.21	.010	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	--	--	--	--	--	--	--	--
15...	1.5	6.5	.100	.31	.030	0	3	1	28	100	10
AUG											
05...	--	--	--	--	--	--	--	--	--	--	--
06...	1.2	5.3	.070	.21	.030	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	1.3	5.7	.140	.43	.020	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT											
01...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	680	--	--	--	--
NOV											
07...	--	--	--	--	--	--	580	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	580	--	--	--	--
JAN											
15...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	670	--	--	--	--
FEB											
12...	--	--	--	--	--	--	580	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
17...	--	--	--	--	--	--	--	--	--	--	--
25...	30	200	0	0	<1	1	340	20	20	0	6
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	510	--	--	--	--
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
21...	40	--	--	--	<1	--	600	--	--	0	--
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	540	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	--	--	--	550	--	--	--	--
15...	90	100	0	--	<1	1	760	10	0	10	6
AUG											
05...	--	--	--	--	--	--	460	--	--	--	--
06...	--	--	--	--	--	--	880	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	--	--	--	--	--	--	340	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT											
01...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	10	--	--
NOV											
07...	--	--	--	--	--	--	--	--	10	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	10	--	--
JAN											
15...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	480	--	--
FEB											
12...	--	--	--	--	--	--	--	--	20	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
17...	--	--	--	--	--	--	--	--	--	--	--
25...	1	0	<3	40	6	0	<10	10	93	30	0
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	80	--	--
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	<3	--	--	--	<10	--	<10	--	--
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	10	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	--	--	--	--	--	20	--	--
15...	4	--	<3	10	11	--	<10	7	<10	60	20
AUG											
05...	--	--	--	--	--	--	--	--	30	--	--
06...	--	--	--	--	--	--	--	--	60	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	--	--	--	--	--	--	29	--	60	--	--
08...	--	--	--	--	--	--	--	--	--	--	--

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG) (71921)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	MOLYB-DENUM, SUS-PENDED RECOV. (UG/L AS MO) (01061)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
OCT											
01...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
MAR											
17...	--	--	--	--	--	--	--	--	--	--	--
25...	31	190	30	160	.0	.0	.0	.01	1	0	<10
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
21...	51	--	--	72	--	.0	--	--	--	--	<10
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	20	--	--	--	--	--	--	--
15...	45	350	160	190	.0	.0	.0	.04	4	0	14
AUG											
05...	--	--	--	50	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB-DENUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI) (01068)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G) (01148)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)
OCT											
01...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
FEB											
12...	--	--	--	--	--	--	--	--	--	--	--
13...	--	-	--	--	--	--	--	--	--	--	--
MAR											
17...	--	--	--	--	--	--	--	--	--	--	--
25...	0	5	3	2	20	1	1	0	0	910	<6.0
APR											
01...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
06...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	0	--	--	--	0	--	1400	<6.0
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
JUL											
07...	--	--	--	--	--	--	--	--	--	--	--
15...	1	6	1	5	17	0	0	0	0	1200	<6.0
AUG											
05...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
MAR 25...	10	7	<3	32	<12	<.4	8.1
APR 23...	--	--	--	--	--	--	--
MAY 21...	--	--	<3	--	--	--	--
JUN 18...	--	--	--	--	--	--	--
JUL 15...	30	--	<3	24	<24	1.4	<10

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT 03...	--	--	--	17	.6	38	.32
NOV 07...	--	--	--	11	.1	40	.50
DEC 04...	--	--	--	12	.2	48	.60
JAN 17...	--	--	--	10	.4	124	.84
FEB 12...	--	--	--	11	.2	32	.28
MAR 25...	.4	8.3	.5	15	.7	11	.71
APR 23...	--	--	--	14	.1	45	.86
MAY 21...	--	--	--	21	.5	45	.49
JUN 18...	--	--	--	15	.8	68	1.3
JUL 15...	1.6	<10	1.5	14	.5	98	.23
AUG 06...	--	--	--	16	.2	37	.07
20...	--	--	--	--	--	105	.40
SEP 04...	--	--	--	8.8	.6	141	1.2

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
JUL 15...	2	5	20	37	48	53	69	86	92	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
OCT 03...	20	.600	.000	3.23	3.62
SEP 04...	29	3.36	.580	1.89	2.44

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 3,79	NOV 7,79	DEC 4,79	JAN 17,80	FEB 12,80	MAR 25,80
TIME	0900	1315	1445	1130	1000	0835
TOTAL CELLS/ML	1400	2800	400	530	170	14000
DIVERSITY: DIVISION	1.4	1.0	0.0	1.3	0.4	0.7
.CLASS	1.4	1.0	0.9	1.3	1.0	0.7
..ORDER	2.1	1.1	1.1	1.7	1.0	0.8
...FAMILY	2.6	1.2	1.3	2.6	2.4	0.9
....GENUS	2.8	1.3	1.3	2.7	2.4	1.2

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
...MICRACTINI-CEAE												
....GOLENKINIA	--	-	--	-	--	-	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	160	12	270	10	--	-	30	6	14	8	*	0
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	27	1	--	-	5	1	--	-	700	5
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
....POLYEDRIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....CRUCIGENIA	110	8	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	110	8	110	4	--	-	10	2	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	14	1	110	4	--	-	35	7	--	-	160	1
..ZYGNEMATALES												
...DESMIDIACEAE												
....COSMARIUM	14	1	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	360#	25	27	1	14	4	30	6	--	-	120	1
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	--	-
....STEPHANODISCUS	14	1	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	14	8	--	-
...CYMBELLACEAE												
....CYMBELLA	14	1	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	91#	17	43#	25	320	2
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	10	2	--	-	--	-
....SYNEDRA	14	1	--	-	14	4	--	-	14	8	--	-
...NAVICULACEAE												
....NAVICULA	14	1	--	-	--	-	20	4	--	-	120	1
...NITZSCHIACEAE												
....NITZSCHIA	470#	33	110	4	110#	29	220#	42	57#	33	230	2
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	--	-	*	0
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	260#	64	--	-	29#	17	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CENTRITRACTACEAE												
....CENTRITRACTUS	--	-	--	-	--	-	--	-	--	-	--	-
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

(CONTINUED)

DATE	OCT 3,79		NOV 7,79		DEC 4,79		JAN 17,80		FEB 12,80		MAR 25,80	
TIME	0900		1315		1445		1130		1000		0835	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	14	1	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	27	2	--	-	--	-	--	-	--	-	*	0
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	460	3
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	12000#	83
....SPIRULINA	--	-	--	-	--	-	--	-	--	-	160	1
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	82	6	2200#	77	--	-	66	12	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	15	3	--	-	*	0
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...PERIDINIACEAE												
....PERIDINIUM	14	1	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 23,80	MAY 21,80	JUN 18,80	JUL 15,80	AUG 6,80	SEP 4,80
TIME	0510	0810	1325	1145	0910	0805
TOTAL CELLS/ML	2000	3100	11000	4000	18000	4900
DIVERSITY: DIVISION	1.8	0.9	1.5	1.9	1.2	1.5
.CLASS	1.8	0.9	1.5	2.0	1.2	1.6
..ORDER	2.4	1.2	2.0	2.6	1.5	2.2
...FAMILY	3.1	1.5	2.6	3.0	1.8	2.6
....GENUS	3.4	2.2	3.6	3.3	2.1	2.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	25	1	*	0	--	-
...HYDRODICTYACEAE												
....PEDIASTRUM	--	-	--	-	--	-	--	-	--	-	150	3
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	290	3	--	-	--	-	--	-
....MICRACTINIUM	--	-	--	-	--	-	--	-	700	4	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	330#	16	120	4	1400	13	130	3	150	1	370	8
....CHLORELLA	39	2	--	-	350	3	--	-	--	-	--	-
....DICTYOSPHAERIUM	100	5	--	-	470	4	--	-	130	1	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	150	1	37	1
....OOCYSTIS	--	-	64	2	120	1	25	1	*	0	--	-
....POLYEDRIOPSIS	--	-	--	-	--	-	25	1	--	-	--	-
....SELENASTRUM	--	-	--	-	230	2	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	58	1	--	-	*	0	--	-
....WESTELLA	--	-	--	-	--	-	--	-	100	1	--	-
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	--	-	200	1	--	-
....CRUCIGENIA	--	-	1900#	61	700	7	400	10	1100	6	--	-
....SCENEDESMUS	130	6	360	12	700	7	750#	19	750	4	940#	19
....TETRASTRUM	--	-	52	2	230	2	--	-	300	2	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	100	1	--	-
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	*	0	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	26	1	100	3	870	8	180	4	--	-	260	5
..ZYGNEMATALES												
...DESMIDIACEAE												
....COSMARIUM	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	90	4	64	2	2900#	27	250	6	250	1	410	8
....MELOSIRA	--	-	--	-	520	5	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	150	8	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	39	2	--	-	--	-	--	-	*	0	--	-
...NAVICULACEAE												
....NAVICULA	13	1	--	-	120	1	75	2	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	220	11	90	3	290	3	750#	19	600	3	2000#	40
...SURIRELLACEAE												
....SURIRELLA	--	-	--	-	--	-	--	-	--	-	--	-
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-	--	-
.XANTHOPHYCEAE												
..HETEROCOCCALES												
...CENTRITRACTACEAE												
....CENTRITRACTUS	--	-	--	-	--	-	--	-	--	-	75	2
...CHLOROTHECIACEAE												
....OPHIOCYTIUM	--	-	--	-	--	-	25	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

(CONTINUED)

DATE	APR 23,80		MAY 21,80		JUN 18,80		JUL 15,80		AUG 6,80		SEP 4,80	
TIME	0510		0810		1325		1145		0910		0805	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	25	1	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	25	1	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	300	6
....ANACYSTIS	280	14	180	6	930	9	480	12	12000#	67	150	3
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	650	4	--	-
....OSCILLATORIA	330#	16	--	-	--	-	600	15	--	-	--	-
....SPIRULINA	--	-	--	-	--	-	--	-	--	-	--	-
...RIVULARIACEAE												
....RAPHIDIOPSIS	190	9	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	39	1	230	2	230	6	500	3	75	2
....TRACHELOMONAS	90	4	120	4	290	3	--	-	100	1	150	3
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	*	0	--	-	25	1	*	0	--	-
...PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06351000 CANNONBALL RIVER BELOW BENTLEY, ND

LOCATION.--Lat 46°21'30", long 102°02'30", in SW¼SW¼ sec.6, T.133 N., R.90 W., Grant County, Hydrologic Unit 10130204, on left bank 0.25 mi (0.4 km) downstream from Thirty Mile Creek, and 2 mi (3 km) northeast of Bentley.

DRAINAGE AREA.--1,140 mi² (2,950 km²), approximately.

PERIOD OF RECORD.--April 1943 to current year. Published as "near New Leipzig" 1943 to June 1952. Records published for both sites October 1951 to June 1952.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder at present site and datum since Oct. 1, 1951. Datum of gage is 2,252.09 ft (686.437 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 7, 1947, nonrecording gage and Nov. 7, 1947, to June 16, 1952, water-stage recorder, at site 8 mi (13 km) downstream at different datum.

REMARKS.--Records good except those for the winter period, which are fair. Some diversions and some storage in small lakes above the station.

AVERAGE DISCHARGE.--37 years, 90.6 ft³/s (2.566 m³/s), 65,640 acre-ft/yr (80.9 hm³/yr); median of yearly mean discharges, 69 ft³/s (1.95 m³/s), 50,000 acre-ft/yr (62 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,800 ft³/s (1,470 m³/s) Apr. 17, 1950, gage height, 34.0 ft (10.36 m), from floodmark in well, site and datum then in use, from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of slope-area measurement at gage height 26.9 ft (8.20 m) and slope-area and contracted-opening measurements at gage height 34.0 ft (10.36 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1889 that of Apr. 17, 1950. Flood of Mar. 25 and 26, 1943, reached a stage of 26.9 ft (8.199 m), site and datum then in use, discharge 15,000 ft³/s (425 m³/s) by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 6	0545	*2,780	78.7	11.20	3.414	June 15	1945	545	15.4	5.44	1.658

Minimum daily discharge, 1.1 ft³/s (0.031 m³/s) Aug. 9, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	14	11	14	6.0	12	45	17	5.3	6.2	1.4	20
2	7.1	15	12	14	6.0	11	50	16	7.0	5.7	1.5	18
3	7.2	15	13	13	6.0	11	50	16	249	5.3	1.4	16
4	7.1	15	14	13	7.0	10	55	15	246	4.9	1.2	14
5	7.1	15	15	12	8.0	9.0	55	15	443	4.7	1.4	13
6	7.1	15	15	12	9.0	8.0	45	14	2080	4.7	1.3	12
7	7.1	14	15	11	10	8.0	45	14	674	4.1	1.3	11
8	7.5	15	15	10	10	9.0	45	13	261	3.7	1.2	11
9	7.5	15	15	9.0	10	10	45	13	155	3.6	1.1	10
10	7.5	15	15	7.0	10	11	40	14	99	3.3	1.2	8.0
11	7.6	15	15	6.0	9.5	11	35	13	66	3.0	1.3	7.1
12	18	15	14	6.0	9.5	12	35	14	47	2.8	1.3	7.2
13	16	15	13	6.0	9.5	12	38	13	42	2.7	1.2	6.3
14	15	15	13	6.5	9.0	15	37	13	53	2.7	1.1	5.6
15	15	15	13	6.5	8.0	20	34	12	287	2.6	1.4	5.1
16	15	15	12	6.5	8.0	22	32	12	242	2.5	2.5	4.9
17	14	15	12	7.0	8.0	21	30	11	91	2.5	3.4	5.0
18	14	15	13	8.0	8.0	20	28	10	56	2.5	3.2	4.9
19	14	15	14	9.0	9.0	20	25	9.8	41	2.7	2.7	5.8
20	14	15	14	9.0	10	19	18	9.4	32	2.7	2.3	5.6
21	14	15	14	9.0	12	19	13	8.6	27	2.4	2.2	5.8
22	14	15	14	9.0	12	20	12	7.6	23	2.3	2.1	6.1
23	14	14	14	9.0	12	22	16	6.2	21	2.2	2.1	6.1
24	14	14	14	10	12	22	24	5.3	18	2.0	2.0	5.7
25	14	14	13	9.0	12	25	18	4.9	15	2.1	1.7	6.5
26	14	13	13	9.0	12	25	18	3.8	12	2.0	2.2	6.5
27	14	13	13	8.0	14	25	17	3.7	9.6	2.0	2.0	6.6
28	15	12	13	6.0	14	25	18	4.3	7.7	2.0	2.5	6.5
29	15	12	14	6.0	13	30	17	4.0	7.1	1.8	3.0	6.1
30	15	11	14	6.0	---	35	17	4.2	7.1	1.6	30	5.3
31	15	---	14	6.0	---	40	---	4.7	---	1.5	25	---
TOTAL	373.3	431	423	272.5	283.5	559.0	957	321.5	5323.8	94.8	108.2	251.7
MEAN	12.0	14.4	13.6	8.79	9.78	18.0	31.9	10.4	177	3.06	3.49	8.39
MAX	18	15	15	14	14	40	55	17	2080	6.2	30	20
MIN	7.1	11	11	6.0	6.0	8.0	12	3.7	5.3	1.5	1.1	4.9
AC-FT	740	855	839	541	562	1110	1900	638	10560	188	215	499

CAL YR 1979 TOTAL 53402.7 MEAN 146 MAX 3640 MIN 7.1 AC-FT 105900
WTR YR 1980 TOTAL 9399.3 MEAN 25.7 MAX 2080 MIN 1.1 AC-FT 18640

06351680 WHITE BUTTE FORK CEDAR CREEK NEAR SCRANTON, ND

LOCATION.--Lat 46°19'20", long 102°59'45", in NW¼ sec.21, T.133 N., R.98 W., Slope County, Hydrologic Unit 10130205, on left bank 1,200 ft (370 m) downstream from county highway bridge, and 13 mi (21 km) northeast of Scranton.

DRAINAGE AREA.--42.9 mi² (111.1 km²).

PERIOD OF RECORD.--March 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,825 ft (861 m), from topographic map.

REMARKS.--Records good except those for the winter period, which are fair.

AVERAGE DISCHARGE.--15 years, 4.45 ft³/s (0.126 m³/s), 3,220 acre-ft/yr (3.97 hm³/yr), median of yearly mean discharges, 4.4 ft³/s (0.12 m³/s), 3,200 acre-ft/yr (4.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 645 ft³/s (18.3 m³/s) May 8, 1970, gage height, 7.20 ft (2.195 m); maximum gage height, 7.76 ft (2.365 m) May 8, 1967; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.0 ft³/s (0.057 m³/s) Mar. 25, gage height, 2.88 ft (0.878 m); no peak above base of 50 ft³/s (1.42 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.04	.18	.10	.00	.00	.40	.03	.00	.00	.00	.00
2	.00	.05	.20	.10	.00	.00	.40	.03	.00	.00	.00	.00
3	.00	.07	.25	.10	.00	.00	.40	.03	.00	.00	.00	.00
4	.00	.07	.25	.08	.00	.00	.36	.03	.00	.00	.00	.00
5	.00	.09	.20	.08	.00	.00	.36	.03	.01	.00	.00	.00
6	.00	.09	.20	.08	.00	.00	.31	.02	.12	.00	.00	.00
7	.00	.11	.20	.05	.00	.00	.24	.02	.27	.00	.00	.00
8	.00	.12	.20	.05	.00	.00	.21	.02	.21	.00	.00	.00
9	.00	.12	.20	.02	.00	.00	.18	.02	.15	.00	.00	.00
10	.00	.12	.20	.02	.00	.00	.15	.03	.12	.00	.00	.00
11	.00	.12	.18	.00	.00	.00	.15	.02	.04	.00	.00	.00
12	.00	.12	.18	.00	.00	.00	.09	.01	.03	.00	.00	.00
13	.00	.12	.18	.00	.00	.00	.07	.01	.04	.00	.00	.00
14	.00	.15	.15	.00	.00	.00	.05	.02	.05	.00	.00	.00
15	.00	.15	.15	.00	.00	.10	.03	.03	.15	.00	.00	.00
16	.00	.12	.12	.00	.00	.30	.02	.02	.12	.00	.00	.00
17	.00	.12	.12	.00	.00	.50	.02	.02	.05	.00	.00	.00
18	.00	.15	.12	.00	.00	.70	.02	.02	.03	.00	.00	.00
19	.00	.15	.12	.00	.00	.80	.01	.02	.02	.00	.00	.00
20	.00	.15	.10	.00	.00	.70	.02	.02	.02	.00	.00	.00
21	.01	.15	.10	.00	.00	.60	.02	.01	.01	.00	.00	.00
22	.02	.15	.10	.00	.00	.30	.03	.01	.00	.00	.00	.00
23	.02	.20	.10	.00	.00	.40	.03	.00	.00	.00	.00	.00
24	.02	.20	.10	.00	.00	.50	.02	.00	.00	.00	.00	.00
25	.02	.20	.10	.00	.00	1.1	.02	.00	.00	.00	.00	.00
26	.02	.20	.10	.00	.00	.60	.02	.00	.00	.00	.00	.00
27	.02	.20	.10	.00	.00	.50	.02	.00	.00	.00	.00	.00
28	.02	.20	.10	.00	.00	.50	.02	.00	.00	.00	.00	.00
29	.03	.18	.10	.00	.00	.44	.02	.00	.00	.00	.00	.00
30	.03	.18	.10	.00	---	.44	.02	.00	.00	.00	.00	.00
31	.03	---	.10	.00	---	.44	---	.00	---	.00	.00	---
TOTAL	.24	4.09	4.60	.68	.00	8.92	3.71	.47	1.44	.00	.00	.00
MEAN	.008	.14	.15	.022	.000	.29	.12	.015	.048	.000	.000	.000
MAX	.03	.20	.25	.10	.00	1.1	.40	.03	.27	.00	.00	.00
MIN	.00	.04	.10	.00	.00	.00	.01	.00	.00	.00	.00	.00
AC-FT	.5	8.1	9.1	1.3	.00	18	7.4	.9	2.9	.00	.00	.00

CAL YR 1979 TOTAL 1621.17 MEAN 4.44 MAX 250 MIN .00 AC-FT 3220
WTR YR 1980 TOTAL 24.15 MEAN .066 MAX 1.1 MIN .00 AC-FT 48

06352000 CEDAR CREEK NEAR HAYNES, ND

LOCATION.--Lat 46°09'15", long 102°28'25", in W½ sec.20, T.131 N., R.94 W., Adams County, Hydrologic Unit 10130205, on left bank 30 ft (9 m) downstream from bridge on State Highway 8, and 12.5 mi (20 km) north of Haynes.

DRAINAGE AREA.--553 mi^2 (1,430 km^2).

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,472.90 ft (753.740 m) National Geodetic Vertical Datum of 1929, North Dakota Highway Department benchmark. Prior to May 20, 1951, nonrecording gage on former bridge 400 ft (120 m) upstream at same datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--30 years, 35.7 ft^3/s (1.011 m^3/s), 25,860 acre-ft/yr (31.9 hm^3/yr); median of yearly mean discharges, 28 ft^3/s (0.79 m^3/s), 20,300 acre-ft/yr (25 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,870 ft^3/s (223 m^3/s) Apr. 7, 1952, gage height, 21.25 ft (6.477 m); maximum gage height, 22.05 ft (6.721 m) Mar. 28, 1978, backwater from ice and snow; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 17, 1950 reached a stage of about 23 ft (7.0 m), discharge, 26,900 ft^3/s (762 m^3/s), by slope-area measurement at site 9 mi (14 km) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 937 ft^3/s (26.5 m^3/s) June 6, gage height, 12.45 ft (3.795 m), only peak above base of 400 ft^3/s (11.3 m^3/s); minimum daily, 0.40 ft^3/s (0.011 m^3/s) July 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	3.8	3.6	3.0	2.0	2.5	8.1	3.4	1.9	1.6	.61	1.4
2	1.8	3.8	3.6	3.0	2.0	2.5	7.9	3.4	2.0	1.5	.50	1.2
3	1.7	3.7	4.0	3.0	2.5	2.5	7.9	3.4	20	1.5	.45	.87
4	1.7	3.7	4.2	2.5	2.5	2.5	7.6	3.4	7.3	1.5	.66	.81
5	1.7	3.7	4.2	2.5	3.0	2.5	7.5	3.4	9.3	1.4	.50	.85
6	1.7	3.7	4.2	2.5	3.5	2.5	7.3	3.3	772	1.4	.50	.89
7	1.8	3.7	4.2	2.5	3.5	2.5	7.8	3.0	370	1.2	.55	.95
8	1.8	3.7	4.0	2.5	3.5	2.5	6.9	2.9	137	1.1	.50	.87
9	1.8	3.6	4.0	2.0	3.5	2.5	6.8	2.8	64	1.0	.50	.84
10	1.9	3.6	4.0	2.0	3.5	2.5	6.6	2.8	32	.85	.72	.84
11	1.9	3.7	4.0	2.0	3.0	2.5	6.5	2.8	20	.78	.72	.94
12	1.8	3.8	3.5	2.0	3.0	2.5	6.2	2.8	14	.73	.72	1.1
13	1.9	3.8	3.5	2.0	3.0	2.5	6.1	2.8	11	.77	.72	1.2
14	1.9	3.8	3.0	2.5	3.0	3.0	5.7	2.8	10	.88	.72	1.2
15	1.9	3.9	3.0	2.5	2.5	3.5	5.4	2.8	8.0	.88	.72	1.2
16	1.9	4.0	2.5	2.5	2.0	3.5	5.3	2.7	18	.88	1.0	9.7
17	1.9	4.0	2.5	2.5	2.0	4.0	5.0	2.7	31	.78	1.2	27
18	1.9	4.0	2.5	2.5	2.0	6.0	4.8	2.5	33	.72	1.2	27
19	2.7	4.0	3.0	2.5	2.0	8.0	4.6	2.5	17	.72	1.2	27
20	2.6	4.2	3.0	2.5	2.5	7.6	4.3	2.4	11	.72	1.0	27
21	2.4	4.1	3.0	2.5	2.5	7.4	4.3	2.4	7.8	.72	1.0	26
22	2.5	4.1	3.0	2.5	2.5	7.2	4.0	2.3	6.0	.72	.97	23
23	2.6	4.1	3.0	2.5	2.5	7.2	3.8	2.1	4.7	.66	.84	17
24	2.8	4.1	3.0	2.5	2.5	7.6	3.6	1.9	3.7	.50	.78	12
25	3.7	4.1	3.0	2.0	2.5	7.8	3.5	1.7	3.1	.50	.78	9.4
26	3.8	4.1	3.0	2.0	2.5	7.8	3.5	1.6	2.6	.50	.72	6.5
27	3.8	4.1	3.0	2.0	3.0	7.6	3.4	1.5	2.4	.45	.72	5.1
28	3.8	3.8	3.0	2.0	3.0	7.6	3.4	1.7	2.3	.45	.78	4.1
29	3.7	3.8	3.0	2.0	3.0	7.6	3.4	1.7	1.8	.40	.90	4.1
30	3.7	3.8	3.0	2.0	---	7.6	3.4	1.8	1.7	.45	2.8	3.2
31	3.7	---	3.0	2.0	---	7.8	---	1.8	---	.45	1.9	---
TOTAL	74.9	116.3	103.5	73.0	78.5	151.3	164.2	79.1	1624.6	26.59	26.88	243.26
MEAN	2.42	3.88	3.34	2.35	2.71	4.88	5.47	2.55	54.2	.86	.87	8.11
MAX	3.8	4.2	4.2	3.0	3.5	8.0	8.1	3.4	772	1.6	2.8	27
MIN	1.7	3.6	2.5	2.0	2.0	2.5	3.4	1.5	1.7	.40	.45	.81
AC-FT	149	231	205	145	156	300	326	157	3220	53	53	483

CAL YR 1979 TOTAL 25924.20 MEAN 71.0 MAX 3500 MIN 1.5 AC-FT 51420
WTR YR 1980 TOTAL 2762.13 MEAN 7.55 MAX 772 MIN .40 AC-FT 5480

06352400 TIMBER CREEK NEAR BENTLEY, ND

LOCATION.--Lat 46°06'05", long 101°57'26", in NE¼NE¼NE¼ sec.8, T.130 N., R.90 W., Grant County, Hydrologic Unit 10130205, on left bank 100 ft (30 m) upstream from bridge on North Dakota Highway 49, 17 mi (27 km) southeast of Bentley, and 7 mi (11 km) upstream from mouth.

DRAINAGE AREA.--100 mi² (260 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,280 ft (695 m), from topographic map.

REMARKS.--Records fair except those for the winter period, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,700 ft³/s (76.5 m³/s) June 2, 1980, gage height, 13.20 ft (4.023 m); no flow Feb. 15 to Mar. 5, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 110 ft³/s (3.12 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 2	2345	*2,700	76.5	13.20	4.023	June 15	0915	1,580	44.7	10.97	3.344
June 5	1545	1,280	36.2	10.22	3.115						

Minimum daily discharge, 0.24 ft³/s (0.007 m³/s) Sept. 3-5, 9, 19-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.55	1.6	1.3	1.5	.80	.80	4.7	2.5	2.5	.91	.38	.32
2	.55	1.6	1.8	1.5	.90	.70	4.7	2.8	228	.84	.38	.32
3	.60	1.8	1.8	1.4	1.0	.80	5.0	3.0	1040	.84	.38	.24
4	.60	1.8	1.9	1.4	1.1	.80	4.7	2.7	297	.71	.28	.24
5	.60	1.8	2.0	1.3	1.2	.80	4.1	2.4	821	.66	.32	.24
6	.55	1.9	1.9	1.2	1.2	.90	4.2	2.2	297	.66	.32	.28
7	.60	1.9	1.8	1.0	1.3	1.0	4.4	2.2	96	.66	.32	.32
8	.84	1.8	1.6	.80	1.3	1.2	9.0	2.9	55	.60	.32	.28
9	.71	1.7	1.8	.70	1.3	1.7	6.5	2.4	38	.55	.32	.24
10	.55	1.7	2.1	.90	1.2	1.5	5.4	2.2	29	.55	.43	.28
11	.43	1.8	1.8	1.2	1.1	1.2	3.2	1.9	22	.55	.38	.28
12	.38	1.8	1.6	1.4	1.0	1.2	3.0	1.9	18	.43	.43	.28
13	.50	1.8	1.4	1.6	.90	1.3	3.1	1.8	19	.43	.38	.28
14	.43	1.9	1.2	1.4	.80	1.6	2.6	1.6	19	.43	.43	.32
15	.43	2.2	1.1	1.4	.70	2.0	6.7	1.6	450	.43	.43	.28
16	.50	2.2	1.0	1.3	.80	2.3	3.9	1.6	55	.38	.60	.28
17	.66	2.2	1.6	1.2	.90	2.8	5.0	1.4	28	.43	.60	.28
18	.78	2.2	2.2	1.2	1.0	5.0	4.5	1.3	19	.43	.55	.28
19	.91	2.1	2.1	1.2	1.0	4.5	3.1	1.2	12	.50	.50	.24
20	.91	2.1	1.9	1.2	1.1	4.0	2.8	1.2	10	.55	.66	.24
21	.99	2.1	1.7	1.2	1.2	3.9	3.0	1.3	10	.43	.71	.24
22	1.2	2.1	1.5	1.2	1.2	3.6	2.7	1.3	8.5	.55	.55	.28
23	1.2	2.0	1.4	1.2	1.3	3.5	2.5	1.2	6.5	.50	.43	.28
24	1.2	1.8	1.4	1.2	1.3	3.6	3.0	1.2	5.3	.43	.43	.32
25	1.3	1.6	1.5	1.0	1.3	4.2	3.0	1.2	4.3	.43	.38	.32
26	1.4	1.4	1.7	.90	1.3	4.7	3.2	1.1	3.4	.43	.32	.32
27	1.2	1.2	2.0	.80	1.2	5.0	3.2	1.1	2.6	.43	.43	.32
28	1.2	1.0	1.8	.80	1.0	4.7	3.1	2.0	1.8	.43	.38	.28
29	1.4	1.0	1.7	.80	.90	4.4	3.0	1.6	1.6	.43	.43	.32
30	1.5	1.1	1.6	.80	---	4.6	2.6	1.6	1.2	.38	.38	.28
31	1.6	---	1.6	.80	---	4.8	---	2.0	---	.38	.43	---
TOTAL	26.27	53.2	51.2	35.50	31.30	83.10	119.9	56.4	3608.7	16.36	13.28	8.48
MEAN	.85	1.77	1.65	1.15	1.08	2.68	4.00	1.82	120	.53	.43	.28
MAX	1.6	2.2	2.2	1.6	1.3	5.0	9.0	3.0	1040	.91	.71	.32
MIN	.38	1.0	1.0	.70	.70	.70	2.5	1.1	1.2	.38	.28	.24
AC-FT	52	106	102	70	62	165	238	112	7160	32	26	17

CAL YR 1979 TOTAL 8804.39 MEAN 24.1 MAX 1670 MIN .38 AC-FT 17460
WTR YR 1980 TOTAL 4103.69 MEAN 11.2 MAX 1040 MIN .24 AC-FT 8140

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT												
03...	1445	.61	2650	[illegible]	16.0	11.5	14.5	142	270	120	750	370
NOV												
07...	1030	1.9	3100	8.3	2.0	1.0	13.2	101	27	39	820	370
DEC												
04...	1030	1.7	3400	8.3	[illegible]	.0	14.2	106	40	87	740	180
JAN												
17...	1650	1.2	3980	7.9	3.5	.0	9.3	69	K7	--	1100	400
FEB												
12...	1500	.96	4030	7.6	-3.0	1.0	9.2	78	K3	78	1200	570
MAR												
20...	1330	4.1	2150	8.2	5.0	.0	13.2	99	K1	140	480	150
APR												
23...	0915	2.5	2280	8.1	14.0	12.0	10.6	104	50	60	590	240
MAY												
20...	1350	1.2	2920	8.3	27.5	21.0	--	--	400	410	720	270
JUN												
17...	1345	28	2060	8.1	26.0	22.5	7.0	86	200	1600	550	290
JUL												
15...	1745	.44	2390	8.1	26.5	23.0	9.7	118	180	56	630	240
AUG												
07...	1015	.34	2000	8.4	19.5	19.0	7.4	86	840	720	480	140
20...	1000	.47	--	--	--	--	--	--	--	--	--	--
SEP												
03...	1020	.27	2030	8.2	20.5	17.5	8.7	100	800	1100	510	200

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
03...	120	110	420	54	6.7	12	439	14	383	2.4	1200	7.2
NOV												
07...	130	120	490	55	7.3	16	544	0	450	4.4	1300	16
DEC												
04...	100	120	560	82	8.9	16	688	0	560	5.5	1400	15
JAN												
17...	160	160	650	57	8.7	15	800	0	660	16	1600	20
FEB												
12...	190	170	670	55	8.5	13	771	0	632	31	1900	20
MAR												
20...	85	65	330	59	7.4	8.3	400	0	328	4.0	880	9.6
APR												
23...	100	82	320	54	5.7	10	427	0	350	5.4	850	12
MAY												
20...	107	110	460	58	8.6	13	551	0	452	4.4	1200	14
JUN												
17...	90	79	270	51	5.7	13	323	0	265	4.1	810	7.1
JUL												
15...	100	93	350	54	6.9	10	471	0	386	6.0	970	10
AUG												
07...	67	77	300	57	5.9	9.1	403	5	338	2.6	780	11
20...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	76	78	290	55	5.6	9.4	376	0	308	3.8	830	11

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT 03...	.3	1.4	1970	2100	2.68	3.24	.02	--	.060	.07	.69	.75
NOV 07...	.4	2.5	2420	2340	3.29	12.4	2.4	2.0	.030	.04	.97	1.0
DEC 04...	.4	2.4	2520	2560	3.43	11.6	1.4	1.2	.030	.04	1.3	1.3
JAN 17...	.5	6.0	3210	3020	4.37	10.7	2.7	2.7	.150	.19	1.4	1.5
FEB 12...	.5	6.2	3310	3370	4.50	8.58	4.2	4.1	.170	.21	1.0	1.2
MAR 20...	.4	2.7	1560	1590	2.12	17.3	2.5	2.4	.170	.21	.81	.98
APR 23...	.4	1.9	1740	1590	2.37	11.7	.12	.16	.090	.11	1.1	1.2
MAY 20...	.4	2.0	2280	2180	3.10	7.39	.15	.15	.130	.16	.81	.94
JUN 17...	.3	10	1460	1440	1.99	110	.38	.38	.140	.17	1.5	1.6
JUL 15...	.9	.5	1820	1770	2.48	2.16	.06	.08	.050	.06	1.1	1.1
AUG 07...	.4	1.6	1480	1450	2.01	1.36	.00	.00	.050	.06	.58	.63
20...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	.3	1.4	1480	1480	2.01	1.08	.00	.00	.030	.04	.69	.72

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)
OCT 03...	.77	3.4	.000	.00	.000	--	--	--	--	--	--
NOV 07...	3.4	15	.010	.03	.000	--	--	--	--	--	--
DEC 04...	2.7	12	.030	.09	.010	--	--	--	--	--	--
JAN 17...	4.2	19	.030	.09	.000	--	--	--	--	--	--
FEB 12...	5.4	24	.040	.12	.010	--	--	--	--	--	--
MAR 20...	3.5	15	.050	.15	.010	10	1	0	30	200	200
APR 23...	1.3	5.8	.120	.37	.010	--	--	--	--	--	--
MAY 20...	1.1	4.8	.050	.15	.020	10	--	--	--	--	--
JUN 17...	2.0	8.8	.170	.52	.060	20	3	0	14	200	50
JUL 15...	1.2	5.1	.060	.18	.030	0	3	1	7	100	50
AUG 07...	.63	2.8	.040	.12	.000	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	.72	3.2	.030	.09	.020	--	--	--	--	--	--

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS BA) (01008)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BERYL-LIUM, SUS-PENDED RECOV. (UG/L AS BE) (01011)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01013)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G) (01029)
OCT 03...	--	--	--	--	--	--	540	--	--	--	--
NOV 07...	--	--	--	--	--	--	770	--	--	--	--
DEC 04...	--	--	--	--	--	--	710	--	--	--	--
JAN 17...	--	--	--	--	--	--	880	--	--	--	--
FEB 12...	--	--	--	--	--	--	850	--	--	--	--
MAR 20...	30	300	0	0	<1	1	380	0	0	0	6
APR 23...	--	--	--	--	--	--	460	--	--	--	--
MAY 20...	50	--	--	--	<3	--	650	--	--	0	--
JUN 17...	150	70	0	--	<1	0	540	0	0	0	5
JUL 15...	50	100	0	--	<1	1	610	10	10	0	14
AUG 07...	--	--	--	--	--	--	540	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	--	--	--	--	--	--	430	--	--	--	--

DATE	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU) (01043)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	LITHIUM SUS-PENDED RECOV-ERABLE (UG/L AS LI) (01131)
OCT 03...	--	--	--	--	--	--	--	--	20	--	--
NOV 07...	--	--	--	--	--	--	--	--	10	--	--
DEC 04...	--	--	--	-	--	--	--	--	30	--	--
JAN 17...	--	--	--	--	--	--	--	--	10	--	--
FEB 12...	--	--	--	--	--	--	--	--	40	--	--
MAR 20...	1	0	<3	0	1	0	<10	10	16	110	10
APR 23...	--	--	--	--	--	--	--	--	50	--	--
MAY 20...	--	--	<8	--	--	--	<25	--	290	--	--
JUN 17...	2	--	<3	10	8	--	<10	10	36	60	0
JUL 15...	3	--	<3	10	19	--	<10	14	<10	120	80
AUG 07...	--	--	--	--	--	--	22	--	40	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	--	--	--	--	--	--	27	--	30	--	--

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, SUS- PENDED RECOV. (UG/L AS MN) (01054)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY SUS- PENDED RECOV- ERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG) (71921)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, SUS- PENDED RECOV. (UG/L AS MO) (01061)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)
MAR											
20...	96	140	20	120	.1	.0	.1	.03	1	0	<10
APR											
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
20...	140	--	--	150	--	.0	--	--	--	--	<25
JUN											
17...	67	420	170	250	.1	.0	.1	.02	6	0	11
JUL											
15...	43	140	110	26	.0	.0	.0	.02	4	--	<10
AUG											
07...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
03...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01063)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, SUS- PENDED RECOV- ERABLE (UG/L AS NI) (01066)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, SUS- PENDED TOTAL (UG/L AS SE) (01146)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) (01148)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
MAR											
20...	1	2	0	3	20	9	0	9	0	1300	<6.0
APR											
23...	--	--	--	--	--	--	--	--	--	--	--
MAY											
20...	--	--	--	0	--	--	--	5	--	1900	<8.0
JUN											
17...	0	10	5	5	20	2	0	2	1	1100	<6.0
JUL											
15...	7	6	1	5	24	2	0	2	0	630	<3.0
AUG											
07...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
SEP											
03...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, SUS- PENDED RECOV- ERABLE (UG/L AS ZN) (01091)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)
OCT							
03...	--	--	--	--	--	--	--
NOV							
07...	--	--	--	--	<51	<.4	<16
DEC							
04...	--	--	--	--	--	--	--
JAN							
17...	--	--	--	--	--	--	--
FEB							
12...	--	--	--	--	--	--	--
MAR							
20...	20	20	4	26	<23	<.4	<10
APR							
23...	--	--	--	--	--	--	--
MAY							
20...	--	--	<8	--	--	--	--
JUN							
17...	30	30	4	24	<20	3.6	16
JUL							
15...	40	--	<3	53	<34	<.4	<14
AUG							
07...	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--
SEP							
03...	--	--	--	--	--	--	--

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT 03...	--	--	--	9.9	1.2	13	.02
NOV 07...	.7	<15	.8	17	.1	33	.17
DEC 04...	--	--	--	30	.4	16	.07
JAN 17...	--	--	--	16	.5	93	.31
FEB 12...	--	--	--	16	.6	26	.07
MAR 20...	.4	<11	.5	13	.5	12	.13
APR 23...	--	--	--	22	.2	42	.28
MAY 20...	--	--	--	21	.5	49	.16
JUN 17...	5.9	16	5.7	27	--	133	10
JUL 15...	1.0	<14	1.0	15	.4	49	.06
AUG 07...	--	--	--	9.3	.2	10	.01
20...	--	--	--	--	--	32	.04
SEP 03...	--	--	--	16	.1	25	.02

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
JUN 17...	45	63	92	94	96	98	100	--	--	--
JUL 15...	23	38	55	58	59	66	78	90	95	100

DATE	LENGTH OF EXPU-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
OCT 03...	27	6.74	2.75	9.06	10.6
NOV 07...	35	.490	.220	.550	.630
JUL 15...	28	.840	.000	9.84	12.7
AUG 07...	23	3.93	.670	6.77	8.35
SEP 03...	27	2.13	.430	3.54	4.41

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	OCT 3,79	NOV 7,79	DEC 4,79	JAN 17,80	FEB 12,80	MAR 20,80
TIME	1445	1030	1030	1650	1500	1330
TOTAL CELLS/ML	1100	12000	24000	11000	3300	6000
DIVERSITY: DIVISION	1.3	1.0	0.8	1.6	1.8	1.4
.CLASS	1.3	1.4	0.9	1.6	2.0	1.5
..ORDER	2.1	1.5	0.9	2.1	2.6	1.9
...FAMILY	2.5	1.6	0.9	2.1	2.8	2.1
....GENUS	2.9	1.6	0.9	2.1	2.8	2.1

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	120	11	6600#	57	18000#	74	2600#	24	510#	15	89	1
....CHLORELLA	140	13	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	*	0
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	*	0	--	-	--	-	--	-	32	1	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	22	2	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	89	8	--	-	--	-	--	-	--	-	--	-
....TETRASTRUM	--	-	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	--	-	--	-
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-	290	5
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	430#	38	90	1	--	-	580	5	1100#	33	140	2
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	39	3	90	1	400	2	2400#	23	63	2	160	3
....MELOSIRA	--	-	90	1	--	-	--	-	--	-	--	-
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-	36	1
....COCCONEIS	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	2400#	21	--	-	580	5	480	14	1200#	20
...FRAGILARIACEAE												
....ASTERIONELLA	--	-	--	-	--	-	--	-	--	-	--	-
....FRAGILARIA	--	-	90	1	--	-	--	-	--	-	--	-
....SYNEDRA	17	1	--	-	--	-	--	-	--	-	*	0
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	--	-	--	-	--	-	--	-	--	-	--	-
....NAVICULA	11	1	--	-	--	-	--	-	--	-	110	2
...NITZSCHIACEAE												
....NITZSCHIA	61	5	90	1	--	-	190	2	32	1	53	1
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	2100#	18	5800#	24	--	-	320	10	120	2
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	350	11	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	72	6	--	-	--	-	97	1	95	3	71	1
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-	120	2
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENOPSIS	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	3500#	59
....SPIRULINA	--	-	--	-	--	-	--	-	32	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	OCT 3,79 1445		NOV 7,79 1030		DEC 4,79 1030		JAN 17,80 1650		FEB 12,80 1500		MAR 20,80 1330	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	*	0	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	100	9	--	-	--	-	4300#	40	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	290	9	*	0
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	32	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	APR 23,80	MAY 20,80	JUN 17,80	JUL 15,80	AUG 7,80	SEP 3,80
TIME	0915	1350	1345	1745	1015	1020
TOTAL CELLS/ML	5800	4700	13000	1400	1400	260
DIVERSITY: DIVISION	1.6	1.6	1.2	1.9	1.6	0.7
.CLASS	1.6	1.6	1.2	1.9	1.6	0.7
..ORDER	1.6	1.7	1.5	2.8	2.1	1.6
...FAMILY	1.9	1.9	1.6	3.1	2.6	2.1
....GENUS	2.2	2.2	1.8	3.1	2.7	2.4

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	52	4	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	2500#	43	780#	16	200	2	26	2	--	-	13	5
....CHLORELLA	--	-	--	-	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	230	5	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-	--	-
....SCENEDESMUS	200	3	200	4	--	-	77	6	100	8	--	-
....TETRASTRUM	--	-	100	2	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	--	-	--	-	52	4	--	-	--	-
...PALMELLACEAE												
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	50	1	3000#	23	90	7	170	12	13	5
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	180	4	7700#	58	170	12	150	11	52#	20
....MELOSIRA	--	-	--	-	810	6	--	-	26	2	26	10
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	--	-	--	-	--	-	--	-	--	-	--	-
....COCCONEIS	--	-	--	-	--	-	--	-	26	2	13	5
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....ASTERIONELLA	50	1	--	-	--	-	--	-	--	-	--	-
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	13	1	--	-	--	-
...NAVICULACEAE												
....GYROSIGMA	50	1	--	-	--	-	--	-	--	-	--	-
....NAVICULA	50	1	50	1	--	-	13	1	39	3	13	5
...NITZSCHIACEAE												
....NITZSCHIA	250	4	75	2	400	3	90	7	170	12	120#	45
.CHRYSOPHYCEAE												
..CHRYSOMONADALES												
...CHROMULINACEAE												
....CHRYSOCOCCUS	--	-	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	50	1	25	1	200	2	100	8	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	710	5	26	2	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	1800#	31	2700#	56	--	-	450#	33	13	1	13	5
....COCCOCHLORIS	400	7	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENOPSIS	--	-	--	-	--	-	--	-	120	8	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	180	13	540#	40	--	-
....SPIRULINA	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06352400 TIMBER CREEK NEAR BENTLEY, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	APR 23,80		MAY 20,80		JUN 17,80		JUL 15,80		AUG 7,80		SEP 3,80	
TIME	0915		1350		1345		1745		1015		1020	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	200	2	--	-	13	1	--	-
....TRACHELOMONAS	400	7	400	8	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..GYMNODINIALES												
...GYMNODINIACEAE												
....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	13	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06353000 CEDAR CREEK NEAR RALEIGH, ND

LOCATION.--Lat 46°05'30", long 101°20'00", in NE¼SE¼ sec.8, T.130 N., R.85 W., Grant County, Hydrologic Unit 10130205, on left bank at upstream side of bridge on N.D. Highway 31, 6 mi (10 km) upstream from mouth, and 19 mi (30 km) south of Raleigh.

DRAINAGE AREA.--1,750 mi² (4,530 km²), approximately.

PERIOD OF RECORD.--April to September 1939, March 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,881.23 ft (573.399 m) National Geodetic Vertical Datum of 1929. Prior to June 6, 1962, nonrecording gage at same site and datum, and June 6, 1962, to Sept. 7, 1972, at site 1 mi (2 km) upstream at datum 9.58 ft (2.920 m) higher.

REMARKS.--Records good except those for the winter period, which are fair.

AVERAGE DISCHARGE.--18 years (water years 1963-80), 99 ft³/s (2.804 m³/s), 71,730 acre-ft/yr (88.4 hm³/yr); median of yearly mean discharges, 80 ft³/s (2.26 m³/s), 58,000 acre-ft/yr (72 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft³/s (379 m³/s) Mar. 28, 1978, gage height, 13.70 ft (4.176 m); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1950, about 18 ft (5.5 m) Apr. 18, 1950, discharge 45,000 ft³/s (1,270 m³/s), on basis of slope-area measurement 5 mi (8 km) upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft³/s (19.8 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 4	1700	*1,180	33.4	5.16	1.573	June 7	0400	950	26.9	4.72	1.439

No flow Aug. 4-6, 13-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	10	9.0	4.5	3.5	8.0	30	7.8	2.6	19	.19	26
2	4.8	10	9.0	4.5	3.5	8.0	28	7.0	2.8	16	.16	8.2
3	4.4	10	9.0	4.2	3.5	7.0	28	6.8	3.4	14	.08	2.6
4	4.4	10	8.5	4.2	3.5	6.0	27	6.2	350	12	.00	1.2
5	4.0	10	8.0	4.0	3.5	5.0	27	5.0	509	12	.00	.65
6	4.0	11	8.0	4.0	3.5	5.0	27	4.8	454	10	.00	.50
7	4.0	11	8.0	4.0	3.5	5.0	26	3.6	700	8.2	.01	.26
8	4.2	11	7.5	4.0	3.5	6.0	26	3.2	311	7.6	.01	.13
9	4.4	11	7.5	4.0	3.5	6.0	26	3.0	222	7.2	.01	.10
10	4.4	12	7.5	4.0	3.5	6.0	23	2.9	437	7.0	.01	.08
11	4.4	12	7.0	4.0	3.5	6.0	22	3.0	317	7.5	.01	.08
12	4.4	12	6.8	3.9	3.0	7.0	22	3.0	228	5.2	.01	.26
13	4.4	12	6.5	3.9	3.0	7.0	24	3.0	190	3.6	.00	.22
14	4.4	12	6.5	3.9	3.0	8.0	24	2.6	170	2.8	.00	.16
15	4.6	13	6.2	3.9	3.0	9.0	23	2.5	210	2.5	.00	.16
16	4.8	14	6.0	3.8	3.0	10	21	2.2	158	1.9	1.3	.13
17	5.0	13	5.9	3.8	3.0	11	21	2.4	393	1.8	4.6	.10
18	5.2	13	5.8	3.8	3.0	12	21	2.5	223	1.6	1.4	.08
19	5.8	12	5.8	3.8	3.0	13	20	2.6	142	5.5	.72	.07
20	6.2	12	5.8	3.8	2.9	14	20	3.2	100	49	10	.06
21	6.5	12	5.8	3.8	2.8	14	19	3.2	74	20	26	.05
22	6.2	12	5.8	3.8	2.7	15	18	2.6	56	7.2	8.9	.03
23	6.0	12	5.8	3.7	3.0	15	18	2.2	51	4.0	3.0	.01
24	7.0	11	5.6	3.7	5.0	15	17	2.1	56	2.2	1.2	.02
25	7.5	11	5.6	3.7	8.2	16	15	1.7	49	1.6	.72	.03
26	8.2	11	5.6	3.7	9.0	17	14	1.4	48	1.2	.50	.03
27	8.6	11	5.5	3.7	10	18	12	1.4	34	1.0	.40	.03
28	9.6	10	5.5	3.7	10	20	12	3.2	28	.85	.22	.03
29	10	10	5.0	3.7	9.0	23	10	3.0	25	.60	.16	.02
30	11	10	5.0	3.5	---	25	8.6	2.6	22	.40	.10	.01
31	10	---	5.0	3.5	---	30	---	2.6	---	.22	.40	---
TOTAL	184.7	341	204.5	120.5	125.1	367.0	629.6	103.3	5565.8	234.17	60.11	41.30
MEAN	5.96	11.4	6.60	3.89	4.31	11.8	21.0	3.33	186	7.55	1.94	1.38
MAX	11	14	9.0	4.5	10	30	30	7.8	700	49	26	26
MIN	4.0	10	5.0	3.5	2.7	5.0	8.6	1.4	2.6	.22	.00	.01
AC-FT	366	676	406	239	248	728	1250	205	11040	464	119	82

CAL YR 1979 TOTAL 47815.30 MEAN 131 MAX 2920 MIN 1.6 AC-FT 94840
WTR YR 1980 TOTAL 7977.08 MEAN 21.8 MAX 700 MIN .00 AC-FT 15820

06354000 CANNONBALL RIVER AT BREIEN, ND

LOCATION.--Lat 46°22'33", long 100°56'03", in sec.36, T.134 N., R.82 W., Morton County, Hydrologic Unit 10130206, on left bank at downstream side of bridge on State Highway 6, 1,500 ft (460 m) downstream from Louise Creek, and 0.6 mi (1.0 km) southeast of Breien. Prior to June 12, 1973, at site 600 ft (180 m) upstream on right bank.

DRAINAGE AREA.--4,100 mi² (10,600 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1934 to current year.

REVISED RECORDS.--WSP 786: 1934. WSP 1146: 1943. WSP 1279: 1936-37(M), 1947(M). WSP 1509: 1955(M).

GAGE.--Water-stage recorder. Datum of gage is 1,673.54 ft (510.095 m) National Geodetic Vertical Datum of 1929. Prior to June 12, 1973, at site 600 ft (180 m) upstream at datum 3.00 ft (0.914 m) higher. June 13, 1973, to April 8, 1980, at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records fair. Some storage in several small lakes above station.

AVERAGE DISCHARGE.--46 years, 249 ft³/s (7.052 m³/s), 180,400 acre-ft/yr (222 hm³/yr); median of yearly mean discharges, 182 ft³/s (5.15 m³/s), 132,000 acre-ft/yr (163 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,800 ft³/s (2,680 m³/s) Apr. 19, 1950, gage height, 22.30 ft (6.797 m), from floodmarks, from rating curve extended above 16,000 ft³/s (453 m³/s) on basis of slope-area and contracted-opening measurements of peak flow, site and datum then in use; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,560 ft³/s (72.5 m³/s) June 8, gage height, 7.72 ft (2.353 m), only peak above base of 1,000 ft³/s (28.3 m³/s); minimum daily, 2.3 ft³/s (0.065 m³/s) Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	32	41	33	8.0	12	115	50	22	46	3.5	20
2	25	33	41	32	9.0	11	142	47	22	42	3.7	14
3	23	28	41	32	9.0	11	135	51	26	38	3.1	28
4	23	31	41	31	10	11	135	47	22	33	2.4	17
5	22	34	41	31	10	11	130	43	25	44	2.3	13
6	21	27	42	30	9.0	12	130	39	795	29	2.6	10
7	21	28	41	27	9.0	12	127	38	562	25	2.6	12
8	21	24	41	24	10	12	256	38	2330	20	2.4	12
9	21	29	42	22	10	13	259	38	1160	20	2.4	9.7
10	22	36	43	19	10	14	204	37	825	17	2.7	8.8
11	22	37	41	17	10	14	151	39	605	16	2.7	7.6
12	21	42	40	17	10	14	145	36	596	25	2.6	9.4
13	22	42	39	16	10	14	136	32	460	20	2.6	15
14	22	40	38	16	9.0	15	118	30	577	15	2.6	14
15	23	43	37	16	9.0	16	115	29	356	12	2.4	14
16	22	44	36	15	9.0	19	115	27	715	9.7	7.1	12
17	22	44	35	15	9.0	25	107	26	750	8.8	8.8	11
18	22	44	35	15	8.0	33	103	25	755	8.8	9.7	9.7
19	28	43	35	14	9.0	40	107	24	508	8.8	13	9.4
20	36	43	35	14	10	46	86	23	356	9.7	17	8.5
21	34	43	34	13	11	51	84	22	250	8.8	23	7.9
22	33	43	34	13	11	57	78	21	194	47	53	7.1
23	31	43	34	12	11	59	77	20	155	28	30	7.1
24	31	42	34	12	11	60	73	16	145	17	18	6.8
25	31	42	34	11	11	65	66	16	338	12	12	7.6
26	30	42	34	10	13	70	61	16	108	8.8	9.1	7.1
27	30	42	34	9.0	13	75	55	16	91	7.6	7.4	6.8
28	30	42	34	8.0	12	82	51	41	77	5.9	6.1	6.6
29	31	42	34	7.0	12	90	50	28	64	4.6	9.4	6.1
30	32	41	33	7.0	---	100	49	25	55	4.4	9.4	5.9
31	33	---	33	8.0	---	105	---	24	---	3.9	13	---
TOTAL	811	1146	1157	546.0	292.0	1169	3460	964	12944	596.0	286.6	324.1
MEAN	26.2	38.2	37.3	17.6	10.1	37.7	115	31.1	431	19.2	9.25	10.8
MAX	36	44	43	33	13	105	259	51	2330	47	53	28
MIN	21	24	33	7.0	8.0	11	49	16	22	3.9	2.3	5.9
AC-FT	1610	2270	2290	1080	579	2320	6860	1910	25670	1180	568	643

CAL YR 1979 TOTAL 134562.5 MEAN 369 MAX 6560 MIN 8.0 AC-FT 266900
WTR YR 1980 TOTAL 23695.7 MEAN 64.7 MAX 2330 MIN 2.3 AC-FT 47000

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-50 (partial-record station), 1970-72, 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1972 to September 1974 (weekly); October 1974 to current year.
WATER TEMPERATURES: July 1972 to September 1974 (weekly); October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,000 micromhos Feb. 9, 1980; minimum daily, 300 micromhos Sept. 23, 1977 and March 23, 1978.
WATER TEMPERATURES: Maximum daily, 30.0°C on July 23, 1977, July 3, 8, 10, 21, 1979; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,000 micromhos Feb. 9; minimum daily, 750 micromhos Aug. 24.
WATER TEMPERATURES: Maximum daily, 28.0°C July 7, 29, Aug. 24; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 25...	1110	31	1920	8.5	6.0	6.0	5.0	11.1	--	32	K10	40
NOV 27...	1240	42	2340	8.4	-6.0	.0	6.1	13.1	--	--	K4	42
DEC 26...	1345	34	2720	8.2	6.0	.0	2.9	13.0	--	15	K3	58
JAN 24...	1320	11	2900	7.9	4.5	.0	1.9	12.0	--	--	K17	37
FEB 28...	1345	12	3710	8.1	-12.0	.0	7.6	--	--	--	K2	160
MAR 26...	1240	70	1730	8.3	6.0	.0	17	12.2	83	10	K3	K60
APR 25...	1325	63	1580	8.4	21.0	16.0	7.1	9.9	99	10	K17	34
MAY 22...	1225	21	1950	8.3	--	22.0	20	8.0	--	38	390	160
JUN 26...	1245	109	1050	8.7	17.0	21.0	66	9.2	102	42	K300	300
JUL 24...	1100	19	1600	8.6	28.5	24.0	19	7.6	90	40	K170	310
AUG 26...	1025	E8.5	1020	8.5	13.0	16.0	120	8.6	85	36	610	410
SEP 25...	1000	7.8	1950	8.5	6.0	11.0	16	9.4	84	27	600	200

DATE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT 25...	440	100	62	70	290	58	6.0	300	12	340	--	740
NOV 27...	610	190	93	91	370	56	6.5	380	13	420	--	900
DEC 26...	610	83	120	76	450	76	7.9	460	11	530	--	1000
JAN 24...	800	170	140	110	470	56	7.2	480	12	630	--	1100
FEB 28...	1000	240	160	150	620	57	8.5	640	16	780	--	1500
MAR 26...	400	67	70	54	250	57	5.5	260	7.1	330	--	610
APR 25...	380	70	68	51	240	58	5.4	240	2.3	310	2.4	520
MAY 22...	430	74	70	63	310	60	6.5	320	11	360	--	720
JUN 26...	280	76	56	33	140	51	3.7	150	9.3	200	--	370
JUL 24...	320	36	59	41	260	63	6.4	270	12	280	--	590
AUG 26...	98	0	23	9.8	190	79	8.4	200	7.6	210	--	280
SEP 25...	350	33	59	50	320	65	7.4	330	11	320	--	670

E - Estimated.

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, TOTAL (MG/L AS F) (01951)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
OCT												
25...	15	--	.4	4.4	1400	1400	1.90	117	.00	.00	.00	.01
NOV												
27...	17	--	.5	7.0	1710	1740	2.33	194	--	--	.15	.09
DEC												
26...	39	.4	.4	6.7	2060	2020	2.80	189	.14	.01	.15	.11
JAN												
24...	20	--	.6	8.4	2200	2240	2.99	65.3	--	--	.09	.10
FEB												
28...	32	--	.6	9.8	2960	2960	4.03	99.9	--	--	.10	.08
MAR												
26...	11	.4	.3	3.4	1230	1200	1.67	232	.08	.00	.08	.08
APR												
25...	11	.5	.4	3.0	1110	1080	1.51	189	.01	.00	.01	.04
MAY												
22...	10	.3	.4	5.1	1440	1410	1.96	81.6	.00	.01	.01	.01
JUN												
26...	9.8	.4	.4	8.2	750	744	1.02	221	.00	.01	.00	.00
JUL												
24...	13	1.5	.7	7.9	1060	1150	1.44	54.4	.00	.00	.00	.00
AUG												
26...	8.5	.7	.5	12	666	661	E.91	15.3	.98	.02	1.0	.83
SEP												
25...	16	1.0	.6	3.8	1320	1320	1.80	27.8	.00	.00	.00	.00

DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)
OCT												
25...	.07	.00	.00	1.2	.97	1.3	.33	.97	1.3	.98	5.8	.050
NOV												
27...	.05	.05	.06	.75	.59	.80	.16	.64	.95	.73	4.2	.020
DEC												
26...	.00	.04	.05	.81	.49	.81	.28	.53	.96	.64	4.3	.270
JAN												
24...	.04	.00	.00	.48	.52	.52	.00	.52	.61	.62	2.7	.020
FEB												
28...	.03	.03	.04	.90	.93	.93	.00	.96	1.0	1.0	4.6	.020
MAR												
26...	.03	.03	.04	.83	.27	.86	.56	.30	.94	.38	4.2	.050
APR												
25...	.00	.00	.00	.82	.39	.82	.43	.39	.83	.43	3.7	.020
MAY												
22...	.01	.01	.01	.99	.81	1.0	.18	.82	1.0	.83	4.5	.350
JUN												
26...	.07	.00	.00	1.6	.71	1.7	.99	.71	1.7	.71	7.5	.090
JUL												
24...	.00	.00	.00	1.3	.59	1.3	.71	.59	1.3	.59	5.8	.110
AUG												
26...	.06	.08	.10	1.3	1.0	1.4	.30	1.1	2.4	1.9	11	.140
SEP												
25...	.00	.00	.00	1.0	.97	1.0	.03	.97	1.0	.97	4.4	.040

E - Estimated.

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, TOTAL (MG/L AS PO4) (71886)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA) (01006)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)
OCT 25...	.15	.000	220	1	--	--	300	--	--	0	600
NOV 27...	.06	.000	--	--	--	--	--	--	--	--	--
DEC 26...	.83	.010	0	1	0	1	400	200	200	0	710
JAN 24...	.06	.020	--	--	--	--	--	--	--	--	--
FEB 28...	.06	.000	--	--	--	--	--	--	--	--	--
MAR 26...	.15	.020	300	1	1	0	200	200	40	0	410
APR 25...	.06	.010	50	3	--	--	200	--	--	0	500
MAY 22...	1.1	.020	520	2	--	--	100	--	--	0	--
JUN 26...	.28	.080	1200	3	0	3	100	20	80	0	310
JUL 24...	.34	.030	480	2	--	--	100	--	--	0	590
AUG 26...	.43	.030	420	5	--	--	100	--	--	0	400
SEP 25...	.12	.010	240	3	1	2	100	0	100	0	540

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)
OCT 25...	1	--	--	0	--	--	2	--	--	13	--
NOV 27...	--	--	--	--	--	--	--	--	--	--	--
DEC 26...	1	1	0	20	20	0	0	0	0	6	6
JAN 24...	--	--	--	--	--	--	--	--	--	--	--
FEB 28...	--	--	--	--	--	--	--	--	--	--	--
MAR 26...	0	0	<1	10	0	10	2	<2	<3	4	2
APR 25...	1	--	--	0	--	--	0	--	--	1	--
MAY 22...	1	--	--	0	--	--	3	--	--	7	--
JUN 26...	0	0	<1	0	0	0	3	0	5	10	7
JUL 24...	0	--	--	10	--	--	3	--	--	8	--
AUG 26...	0	--	--	10	--	--	3	--	--	23	--
SEP 25...	0	0	<1	0	0	0	1	1	<3	7	7

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE) (01044)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI) (01132)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)
OCT										
25...	--	190	--	--	2	--	--	80	80	--
NOV										
27...	--	--	--	--	--	--	--	--	--	--
DEC										
26...	0	140	140	0	3	3	0	100	30	0
JAN										
24...	--	--	--	--	--	--	--	--	--	--
FEB										
28...	--	--	--	--	--	--	--	--	--	--
MAR										
26...	2	550	520	30	2	2	0	20	40	20
APR										
25...	--	280	--	--	3	--	--	70	20	--
MAY										
22...	--	620	--	--	3	--	--	90	170	--
JUN										
26...	3	2000	1200	840	4	3	1	40	90	10
JUL										
24...	--	850	--	--	7	--	--	80	120	--
AUG										
26...	--	5100	--	--	7	--	--	50	100	--
SEP										
25...	0	450	450	<10	4	4	0	90	90	90

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, SUS-PENDED RECOV-ERABLE (UG/L AS NI) (01066)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)
OCT										
25...	--	.1	--	--	0	22	--	--	0	--
NOV										
27...	--	--	--	--	--	--	--	--	--	--
DEC										
26...	50	1.0	1.0	.0	0	7	4	3	1	0
JAN										
24...	--	--	--	--	--	--	--	--	--	--
FEB										
28...	--	--	--	--	--	--	--	--	--	--
MAR										
26...	20	.0	.0	.0	3	5	5	0	1	0
APR										
25...	--	.0	--	--	4	5	--	--	0	--
MAY										
22...	--	.1	--	--	4	7	--	--	0	--
JUN										
26...	80	.1	.1	.0	5	8	2	6	1	0
JUL										
24...	--	.1	--	--	5	10	--	--	1	--
AUG										
26...	--	.1	--	--	4	29	--	--	2	--
SEP										
25...	5	.0	.0	.0	6	9	3	6	0	0

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG) (01076)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)
OCT										
25...	--	0	--	--	0	--	--	--	--	--
NOV										
27...	--	--	--	--	--	--	--	7.3	--	--
DEC										
26...	2	0	0	0	20	10	10	14	13	.2
JAN										
24...	--	0	--	--	--	--	--	13	--	--
FEB										
28...	--	--	--	--	--	--	--	19	--	--
MAR										
26...	1	1	1	0	20	20	4	9.1	8.0	.5
APR										
25...	--	0	--	--	60	--	--	12	--	--
MAY										
22...	--	0	--	--	50	--	--	20	--	--
JUN										
26...	1	0	0	0	70	60	10	--	10	1.8
JUL										
24...	--	0	--	--	90	--	--	17	--	--
AUG										
26...	--	0	--	--	50	--	--	15	--	--
SEP										
25...	0	0	0	0	20	20	<3	--	14	1.0

DATE	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	LENGTH OF EXPO-SURE (DAYS) (00022)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT									
25...	--	35.4	35.4	3.62	.280	29	14	1.2	88
NOV									
27...	9500	--	--	--	--	--	34	3.9	92
DEC									
26...	--	.710	.630	.630	.000	29	9	.83	70
JAN									
24...	--	--	--	--	--	--	16	.48	70
FEB									
28...	--	--	--	--	--	--	29	.98	83
MAR									
26...	17000	--	--	.140	.000	27	32	6.0	98
APR									
25...	--	--	--	--	--	--	21	3.6	94
MAY									
22...	15000	--	--	--	--	--	35	2.0	90
JUN									
26...	43000	--	--	--	--	--	108	32	99
JUL									
24...	230000	2.21	2.05	.070	.020	28	--	--	--
AUG									
26...	36000	--	--	--	--	--	308	7.1	100
SEP									
25...	75000	33.9	31.6	.530	.080	29	32	.67	95

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1900	1800	2100	2700	4000	4000	1300	1550	1900	1300	1600	950
2	1900	1800	2200	2800	4000	4000	1300	1550	1900	1350	1700	850
3	1900	1800	2200	2800	4000	4000	1200	1600	1900	1400	1700	1050
4	1900	1800	2100	2800	4000	3900	1100	1650	1900	1400	1700	1100
5	1900	1800	2150	2800	4000	3600	1050	1650	2000	1500	1700	1150
6	1900	1800	2150	---	4000	3500	1000	1700	1400	1500	1700	1150
7	1900	1900	2150	2800	3500	3500	1000	1700	1500	1500	1700	1150
8	1900	1900	2150	2800	3500	3500	1000	1700	1600	1500	1800	1000
9	1900	1900	2150	2800	5000	3500	1150	1700	850	1400	1800	1000
10	1900	1950	2200	2800	4000	3200	1150	1700	800	1400	1800	950
11	1900	2000	2200	3000	4000	3200	1200	1700	900	1500	1800	1000
12	1900	2000	2200	3000	3500	3000	1200	1750	950	1600	1800	1000
13	1900	2000	2200	3000	3500	3000	1250	1750	1200	1700	1600	1000
14	1950	2000	2200	2900	3500	3000	1300	1750	1400	1750	1800	1050
15	1950	1900	2200	2900	3500	2200	1300	1800	1300	1800	1900	1350
16	1950	1900	2500	2900	3500	2200	1300	1800	1100	1800	1700	1600
17	1900	1800	3000	2900	4000	2200	1300	1800	900	1800	1500	1600
18	1900	1800	3000	2900	4000	2000	1300	1800	1000	1800	1650	1700
19	1950	1800	3000	2900	4000	1800	1300	1850	950	1600	1500	1800
20	2000	1800	3000	2900	4000	1800	1300	1850	1150	1600	1400	1800
21	2000	1800	2900	2900	3500	1700	1300	1900	1100	1500	1200	1900
22	2000	1850	2800	2900	3500	1700	1400	1900	1100	1500	1300	1900
23	1900	1900	2800	3000	3500	1700	1400	1900	1050	1650	825	1900
24	1900	2000	2800	3000	3500	1700	1400	2000	1050	1650	750	1900
25	1850	2000	2800	3000	3500	1600	1400	2000	1050	1500	800	1900
26	1850	2100	2800	3100	3700	1600	1500	2100	1050	1600	1000	1900
27	1800	2100	2800	3500	3700	1600	1500	1900	1050	1650	1100	1900
28	1800	2100	2800	3500	3700	1600	1500	1500	1100	1650	1200	1900
29	1800	2100	2600	3500	4000	1500	1500	1500	1200	1650	1000	1900
30	1800	2100	2600	4000	---	1400	1550	1500	1300	1500	1200	1900
31	1800	---	2600	4000	---	1400	---	1900	---	1500	1000	---
MEAN	1900	1920	2500	3030	3800	2540	1280	1760	1260	1570	1470	1440

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	3.0	.0	.0	.0	.0	1.0	18.0	20.0	22.0	25.0	20.0
2	15.0	1.0	.0	.0	.0	.0	2.0	19.0	23.0	20.0	20.0	16.0
3	14.5	.0	.0	.0	.0	.0	1.0	18.0	19.0	20.0	24.0	21.0
4	14.0	2.0	2.0	.0	.0	.0	3.0	17.0	19.0	23.0	15.0	15.0
5	14.0	1.0	1.5	.0	.0	.0	4.0	16.0	20.0	21.0	20.0	20.0
6	15.0	2.0	.0	---	.0	.0	3.0	19.0	21.0	25.0	19.0	24.0
7	11.5	.0	.0	.0	.0	.0	1.0	15.0	17.0	28.0	20.0	18.0
8	9.0	.0	.0	.0	.0	.0	.0	12.0	18.0	22.0	25.0	21.0
9	10.0	1.5	1.0	.0	.0	.0	3.0	11.0	18.0	21.0	22.0	22.0
10	11.0	.0	2.0	.0	.0	.0	5.0	12.0	18.0	25.0	24.0	15.0
11	12.5	1.0	.0	.0	.0	.0	5.5	11.0	21.0	24.0	27.0	18.0
12	9.0	1.5	.0	.0	.0	.0	8.0	12.0	22.0	24.0	22.0	17.0
13	5.0	.0	.0	1.0	.0	.0	5.0	10.0	20.0	24.0	21.0	14.0
14	5.0	2.0	1.0	1.0	.0	.0	8.0	11.0	23.0	24.0	23.0	15.0
15	12.0	3.0	.0	.0	.0	1.0	9.0	15.0	19.0	24.0	20.0	16.0
16	10.0	3.0	.0	.0	.0	2.0	11.0	16.0	17.0	20.0	18.0	14.0
17	10.0	3.0	1.0	.0	.0	2.5	16.0	15.0	21.0	20.0	17.0	14.0
18	10.5	.0	1.5	.0	.0	2.0	8.0	18.0	23.0	20.0	18.0	13.0
19	7.0	3.0	1.0	.0	.0	2.0	16.0	15.0	19.0	18.0	21.0	12.0
20	10.0	2.0	1.0	.0	.0	1.0	17.0	24.0	22.0	24.0	20.0	16.0
21	7.0	3.0	2.0	.0	.0	1.0	19.0	26.0	24.0	19.0	19.0	15.0
22	7.5	1.0	.0	.0	.0	1.0	16.0	20.0	22.0	22.0	20.0	12.0
23	3.0	.0	1.0	.0	.0	1.0	12.0	25.0	23.0	23.0	20.0	13.0
24	10.0	.0	.0	.0	.0	.0	14.0	16.0	22.0	24.0	28.0	12.0
25	8.0	.0	1.5	.0	.0	1.5	14.0	28.0	24.0	19.0	27.0	12.0
26	7.0	.0	2.5	.0	.0	1.5	20.0	25.0	21.0	23.0	17.0	11.0
27	11.0	.0	.0	.0	.0	1.0	19.0	24.0	22.0	24.0	18.0	12.0
28	9.0	.0	.0	.0	.0	2.0	21.0	24.0	18.0	22.0	19.0	13.0
29	7.0	.0	.0	.0	.0	2.5	15.0	19.0	17.0	28.0	18.5	11.0
30	7.0	.0	1.0	.0	---	1.0	15.0	19.0	20.0	23.0	20.0	15.0
31	4.0	---	1.0	.0	---	1.0	---	18.0	---	25.0	18.0	---
MEAN	9.5	1.0	.5	.0	.0	1.0	9.5	17.5	20.5	22.5	21.0	15.5

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	NOV 27,79		MAR 26,80		MAY 22,80		JUN 26,80	
TIME	1240		1240		1225		1245	
TOTAL CELLS/ML	9500		5400		15000		43000	
DIVERSITY: DIVISION	1.0		1.6		1.2		1.1	
.CLASS	1.0		1.6		1.2		1.1	
..ORDER	1.1		1.7		1.3		1.4	
...FAMILY	1.6		2.1		1.9		1.8	
....GENUS	2.5		2.2		3.0		2.4	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHLOROCOCCACEAE								
....CHLOROCOCCUM	69	1	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	*	0	290	1
...OOCYSTACEAE								
....ANKISTRODESMUS	4000#	42	90	2	2100	14	1400	3
....CHLORELLA	1200	13	--	-	--	-	--	-
....CHODATELLA	210	2	--	-	400	3	--	-
....DICTYOSPHAERIUM	280	3	--	-	3600#	24	--	-
....FRANCEIA	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	69	1	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	600	4	1400	3
....SELENASTRUM	--	-	--	-	130	1	580	1
....TETRAEDRON	--	-	--	-	*	0	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	--	-
....CRUCIGENIA	1100	12	--	-	2100	14	2300	5
....SCENEDESMUS	140	1	--	-	1200	8	8100#	19
....TETRASTRUM	--	-	--	-	--	-	1200	3
..TETRASPORALES								
...PALMELLACEAE								
....GLOEOCYSTIS	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	180	3	130	1	860	2
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	410	4	45	1	--	-	22000#	51
....MELOSIRA	--	-	--	-	--	-	2300	5
..PENNALES								
...CYMBELLACEAE								
....EPITHEMIA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	--	-	45	1	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	45	1	--	-	--	-
...NAVICULACEAE								
....NAVICULA	69	1	90	2	--	-	--	-
....PLAGIOTROPIS	--	-	45	1	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	69	1	2800#	52	670	4	1400	3
...SURIRELLACEAE								
....SURIRELLA	--	-	140	3	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	860	2
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	--	-
....ANACYSTIS	--	-	--	-	3300#	22	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
....ANABAENOPSIS	--	-	--	-	--	-	--	-
....APHANIZOMENON	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	290	1
....SCHIZOTHRIX	--	-	360	7	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE	NOV 27,79		MAR 26,80		MAY 22,80		JUN 26,80	
TIME	1240		1240		1225		1245	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	200	1	--	-
....TRACHELOMONAS	1800#	19	1300#	24	330	2	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	230	4	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

DATE	JUL 24,80	AUG 26,80	SEP 25,80
TIME	1100	1025	1000
TOTAL CELLS/ML	230000	36000	75000
DIVERSITY: DIVISION	1.0	1.4	0.5
.CLASS	1.0	1.4	0.5
..ORDER	1.6	1.8	0.6
...FAMILY	1.9	2.4	1.2
....GENUS	2.7	3.1	1.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHLOROCOCCACEAE						
....CHLOROCOCCUM	--	-	--	-	--	-
...MICRACTINIACEAE						
....GOLENKINIA	--	-	--	-	*	0
...OOCYSTACEAE						
....ANKISTRODESMUS	7500	3	1500	4	3100	4
....CHLORELLA	--	-	--	-	--	-
....CHODATELLA	2100	1	570	2	*	0
....DICTYOSPHAERIUM	65000#	28	13000#	36	920	1
....FRANCEIA	1500	1	--	-	--	-
....KIRCHNERIELLA	*	0	190	1	--	-
....OOCYSTIS	6600	3	570	2	*	0
....SELENASTRUM	--	-	--	-	*	0
....TETRAEDRON	*	0	--	-	*	0
....TREUBARIA	--	-	760	2	--	-
....WESTELLA	3600	2	--	-	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	4800	2	--	-	--	-
....CRUCIGENIA	1200	1	--	-	460	1
....SCENEDESMUS	4800	2	4400	12	1100	1
....TETRASTRUM	--	-	1500	4	*	0
..TETRASPORALES						
...PALMELLACEAE						
....GLOEOCYSTIS	6000	3	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	1500	1	570	2	*	0
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	1700	5	*	0
....MELOSIRA	*	0	--	-	--	-
..PENNALES						
...CYMBELLACEAE						
....EPITHEMIA	--	-	190	1	--	-
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	--	-
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	570	2	--	-
....PLAGIOTROPIS	--	-	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	*	0	1500	4	*	0
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	190	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	4800	2	--	-	--	-
....ANACYSTIS	98000#	42	1900	5	1500	2
....COCCOCHLORIS	--	-	190	1	--	-
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	690	1
....ANABAENOPSIS	5400	2	--	-	520	1
....APHANIZOMENON	4500	2	--	-	6300	8
...OSCILLATORIACEAE						
....LYNGBYA	4800	2	--	-	--	-
....OSCILLATORIA	8400	4	6300#	17	59000#	79
....SCHIZOTHRIX	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CONTINUED ...

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980 (CONTINUED)

DATE TIME	JUL 24,80 1100		AUG 26,80 1025		SEP 25,80 1000	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	*	0	190	1	--	-
....TRACHELOMONAS	--	-	190	1	*	0
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..GYMNODINIALES						
...GYMNODINIACEAE						
....GYMNODINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06354500 BEAVER CREEK AT LINTON, ND

LOCATION.--Lat 46°15'27", long 100°13'58", on line between secs.17 and 18, T.132 N., R.76 W., Emmons County, Hydrologic Unit 10130104, on left bank 60 ft (18 m) downstream from bridge on U.S. Highway 83, 0.7 mi (1.1 km) south of railway station in Linton, and 1 mi (2 km) upstream from Spring Creek.

DRAINAGE AREA.--717 mi² (1,857 km²), of which about 100 mi² (260 km²) is probably noncontributing.

PERIOD OF RECORD.--August 1949 to current year.

REVISED RECORDS.--WSP 1209: Drainage area. WSP 1239: 1950(M).

GAGE.--Water-stage recorder. Datum of gage is 1,690.55 ft (515.280 m) National Geodetic Vertical Datum of 1929. Prior to June 18, 1958, nonrecording gage at site 60 ft (18 m) upstream at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--31 years, 41.5 ft³/s (1.175 m³/s), 30,070 acre-ft/yr (37.1 hm³/yr); median of yearly mean discharges, 27 ft³/s (0.76 m³/s), 19,600 acre-ft/yr (24 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,800 ft³/s (278 m³/s) Apr. 8, 1952, gage height, 17.50 ft (5.334 m); no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.66 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 22	—	300	8.50	a*9.78	2.98	May 28	2200	*428	12.1	8.98	2.74

No flow July 29 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	3.7	3.4	2.1	1.1	.50	60	14	191	.78	.00	.00
2	.30	2.8	3.4	2.1	1.1	.50	50	14	119	.56	.00	.00
3	.30	3.0	3.3	2.0	1.1	.50	60	14	66	.42	.00	.00
4	.40	3.1	3.3	1.9	1.1	.50	40	13	42	.61	.00	.00
5	.40	3.1	3.2	1.9	1.1	.50	50	12	37	.38	.00	.00
6	.50	3.1	3.1	1.9	1.1	.40	50	12	30	.34	.00	.00
7	.60	3.1	3.0	1.8	1.0	.40	45	10	26	.34	.00	.00
8	.50	3.1	3.0	1.8	1.0	.40	42	9.9	22	.19	.00	.00
9	.50	3.0	3.0	1.8	1.0	.50	38	9.4	20	.19	.00	.00
10	.50	3.0	2.9	1.6	1.0	.60	34	9.9	18	.19	.00	.00
11	.50	3.3	2.8	1.6	.90	.60	32	9.9	16	.19	.00	.00
12	.50	3.3	2.7	1.5	.90	.70	30	9.4	13	.16	.00	.00
13	.50	3.3	2.6	1.5	.90	1.0	29	8.8	10	.12	.00	.00
14	.50	3.3	2.6	1.5	.90	5.0	28	9.4	8.0	.19	.00	.00
15	.50	3.4	2.6	1.5	.90	20	28	9.9	7.0	.16	.00	.00
16	.50	3.4	2.6	1.5	.80	40	27	8.8	6.0	.14	.00	.00
17	.50	3.4	2.5	1.5	.80	80	26	8.0	5.0	.10	.00	.00
18	.50	3.4	2.5	1.4	.80	150	25	7.2	4.8	.06	.00	.00
19	.50	3.4	2.5	1.4	.80	240	24	6.9	4.5	.14	.00	.00
20	.55	3.5	2.5	1.4	.80	250	23	5.4	4.2	.34	.00	.00
21	.60	3.6	2.5	1.4	.70	260	22	5.4	4.0	.16	.00	.00
22	.70	3.6	2.4	1.4	.70	270	21	5.6	3.8	.16	.00	.00
23	.80	3.6	2.4	1.4	.70	180	20	4.3	3.7	.06	.00	.00
24	.90	3.6	2.4	1.4	.60	120	19	4.0	3.6	.04	.00	.00
25	1.0	3.6	2.4	1.4	.60	100	18	3.7	3.6	.06	.00	.00
26	1.0	3.6	2.4	1.3	.60	70	17	3.3	3.3	.08	.00	.00
27	1.1	3.6	2.4	1.3	.60	70	16	3.7	3.1	.04	.00	.00
28	1.2	3.5	2.4	1.3	.60	65	15	205	1.9	.02	.00	.00
29	1.3	3.4	2.3	1.2	.50	60	14	373	1.4	.00	.00	.00
30	1.4	3.4	2.2	1.2	---	60	14	297	1.1	.00	.00	.00
31	3.3	---	2.2	1.1	---	55	---	242	---	.00	.00	---
TOTAL	22.75	100.2	83.5	48.1	24.70	2102.10	917	1348.9	679.0	6.22	.00	.00
MEAN	.73	3.34	2.69	1.55	.85	67.8	30.6	43.5	22.6	.20	.000	.000
MAX	3.3	3.7	3.4	2.1	1.1	270	60	373	191	.78	.00	.00
MIN	.30	2.8	2.2	1.1	.50	.40	14	3.3	1.1	.00	.00	.00
AC-FT	45	199	166	95	49	4170	1820	2680	1350	12	.00	.00

CAL YR 1979 TOTAL 22492.16 MEAN 61.6 MAX 2170 MIN .30 AC-FT 44610
WTR YR 1980 TOTAL 5332.47 MEAN 14.6 MAX 373 MIN .00 AC-FT 10580

06354988 BOWMAN-HALEY LAKE NEAR HALEY, ND

LOCATION.--Lat 45°59'06", long 103°14'43", in NE¼ sec.24, T.129 N., R.101 W., Bowman County, Hydrologic Unit 10130301, at dam on North Fork Grand River, and 6 mi (10 km) west of Haley.

DRAINAGE AREA.--446 mi^2 (1,155 km^2), approximately.

PERIOD OF RECORD.--August 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by a rolled earth-fill dam; storage began Aug. 22, 1966; dam completed April 1967. Total capacity is 93,000 acre-ft (115 hm^3) at maximum pool, elevation, 2,777.0 ft (846.430 m). Dead storage is 4,280 acre-ft (5.28 hm^3) below lowest point of outlet, elevation, 2,740.0 ft (835.152 m). Normal operating storage is 20,100 acre-ft (24.8 hm^3) at elevation 2,755.0 ft (839.724 m), crest of spillway. Figures given herein represent total contents. Controlled releases are through a 30-inch (0.762 m) or 8-inch (0.203 m) gate valve. The spillway is uncontrolled "glory hole" type and discharges through a conduit 9 ft (2.743 m) in diameter. The reservoir is for flood control, water supply, and recreation.

COOPERATION.--Records of elevations and contents furnished by Corps of Engineers from capacity table dated August 1966. Elevations affected by wind.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 37,540 acre-ft (46.3 hm^3) Mar. 28, 1978, elevation, 2,762.66 ft (842.059 m); minimum since first reaching spillway level, 14,940 acre-ft (18.4 hm^3) Sept. 26, 28, 1980, elevation, 2,751.70 ft (838.718 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 19,440 acre-ft (24.0 hm^3) Oct. 1 and Mar. 16-21, elevation, 2,754.60 ft (839.602 m); minimum, 14,940 acre-ft (18.4 hm^3) Sept. 26, 28, elevation, 2,751.70 ft (838.718 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,754.59	19,420	—
Oct. 31	2,754.43	19,150	-270
Nov. 30	2,754.37	19,040	-110
Dec. 31	2,754.35	19,010	-30
CAL YR 1979	--	--	+600
Jan. 31	2,754.31	18,940	-70
Feb. 29	2,754.33	18,980	+40
Mar. 31	2,754.50	19,270	+290
Apr. 30	2,754.49	19,250	-20
May 31	2,754.02	18,450	-800
June 30	2,753.54	17,680	-770
July 31	2,752.79	16,510	-1,170
Aug. 31	2,752.17	15,600	-910
Sept. 30	2,751.71	14,950	-650
WTR YR 1980	--	--	-4,470

06355000 NORTH FORK GRAND RIVER AT HALEY, ND

LOCATION.--Lat 45°57'39", long 103°07'09", at southwest corner of sec.30, T.129 N., R.99 W., Bowman County, Hydrologic Unit 10130301, on left bank 10 ft (3 m) downstream from county highway bridge, 300 ft (91 m) south of post office at Haley, and 1 mi (1.6 km) north of South Dakota state line.

DRAINAGE AREA.--509 mi² (1,318 km²).

PERIOD OF RECORD.--May 1908 to September 1917, October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS (WATER YEARS).--WSP 1239: 1908-10, 1913-15(M), 1917(M).

GAGE.--Water-stage recorder. Datum of gage is 2,658.60 ft (810.341 m) National Geodetic Vertical Datum of 1929. Oct. 23, 1945, to June 18, 1951, nonrecording gage on downstream side of bridge near left abutment at present datum. See WSP 1729 or 1917 for history of changes prior to Oct. 23, 1945.

REMARKS.--Records good. Flow regulated since August 1966 by Bowman-Haley Lake (station 06354988) 8 mi (13 km) upstream.

AVERAGE DISCHARGE.--44 years, 28.3 ft³/s (0.802 m³/s), 20,500 acre-ft/yr (25.3 hm³/yr); median of yearly mean discharges, 22 ft³/s (0.62 m³/s), 15,900 acre-ft/yr (20 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft³/s (399 m³/s) Apr. 7, 1952, gage height, 17.03 ft (5.191 m), from rating curve extended above 4,500 ft³/s (127 m³/s) on basis of discharge measurement at gage height, 15.09 ft (4.599 m), half of which was indirect measurement of flow over roadway outside of main channel; maximum gage height, 17.10 ft (5.212 m) Apr. 15, 1950; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7.8 ft³/s (0.22 m³/s) Aug. 16, gage height, 4.65 ft (1.417 m); maximum gage height, 5.37 ft (1.637 m) Sept. 30, backwater from beaver dam; minimum daily discharge, 0.21 ft³/s (0.006 m³/s) June 30, July 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	1.7	1.7	1.8	1.2	1.2	1.9	1.2	1.2	.21	4.6	2.6
2	1.8	1.7	1.7	1.8	1.2	1.2	1.9	1.3	1.1	.35	4.9	2.3
3	1.8	1.9	1.7	1.7	1.3	1.2	1.8	1.3	1.0	.63	4.9	1.9
4	2.2	2.0	1.7	1.6	1.4	1.2	1.8	1.1	.92	.78	4.9	1.8
5	2.9	1.9	1.7	1.4	1.5	1.2	1.8	1.1	1.0	.56	5.1	1.5
6	2.3	1.8	1.8	1.4	1.5	1.2	1.8	1.0	1.1	.46	5.5	1.4
7	2.1	1.7	1.7	1.4	1.5	1.2	1.8	.95	1.2	.42	5.1	1.0
8	2.3	1.7	1.7	1.2	1.4	1.2	1.8	.97	1.3	.44	5.3	.71
9	2.2	1.5	1.7	1.0	1.4	1.2	1.8	.97	1.3	.42	5.1	.56
10	2.0	1.9	1.7	1.0	1.4	1.5	1.9	.95	1.0	.41	5.3	.49
11	2.0	2.0	1.6	1.0	1.4	1.6	1.8	.98	.85	.28	5.5	.49
12	2.9	1.8	1.5	1.0	1.3	1.8	1.7	.95	.71	.29	5.3	.42
13	2.3	1.7	1.5	1.2	1.3	2.0	1.7	.95	.95	.33	5.3	.42
14	2.0	1.7	1.5	1.2	1.2	2.3	1.6	.95	.95	.35	5.3	.42
15	1.8	1.7	1.5	1.4	1.2	2.7	1.7	.98	.95	.58	6.2	.49
16	1.7	1.6	1.4	1.4	1.2	2.5	2.2	.95	.86	1.4	7.1	.42
17	1.7	1.6	1.5	1.5	1.2	2.8	2.0	.95	.86	1.5	7.0	.42
18	1.5	1.6	1.5	1.5	1.2	2.8	1.7	.95	.78	3.2	6.1	.42
19	1.7	1.6	1.7	1.5	1.3	2.8	1.7	1.0	.71	2.1	5.7	.35
20	1.6	1.6	1.8	1.5	1.4	2.8	1.5	.95	.78	3.8	5.7	.42
21	1.6	1.6	1.8	1.5	1.4	2.7	1.4	.95	.78	5.5	5.7	.42
22	1.9	1.6	1.8	1.5	1.4	2.7	1.3	.85	.71	5.5	5.7	.35
23	1.9	1.6	1.8	1.5	1.3	2.4	1.3	.81	.63	4.2	5.7	.35
24	1.8	1.6	1.8	1.5	1.3	2.4	1.2	.73	.56	4.2	5.7	.35
25	1.7	1.6	1.8	1.5	1.3	2.3	1.3	.71	.49	4.4	5.5	.35
26	1.6	1.5	1.8	1.5	1.3	2.2	1.3	.63	.42	4.6	5.3	.28
27	1.6	1.5	1.8	1.4	1.2	2.2	1.3	.63	.35	4.6	5.7	.28
28	1.8	1.5	1.8	1.4	1.2	2.1	1.3	.63	.28	4.4	5.7	.35
29	2.0	1.5	1.8	1.3	1.2	2.0	1.3	.69	.28	4.4	5.3	.35
30	1.8	1.6	1.8	1.2	---	2.1	1.2	.96	.21	4.6	5.1	.35
31	1.8	---	1.8	1.2	---	1.9	---	1.2	---	4.4	3.4	---
TOTAL	60.1	50.3	52.4	43.0	38.1	61.4	48.8	29.24	24.23	69.31	168.7	21.96
MEAN	1.94	1.68	1.69	1.39	1.31	1.98	1.63	.94	.81	2.24	5.44	.73
MAX	2.9	2.0	1.8	1.8	1.5	2.8	2.2	1.3	1.3	5.5	7.1	2.6
MIN	1.5	1.5	1.4	1.0	1.2	1.2	1.2	.63	.21	.21	3.4	.28
AC-FT	119	100	104	85	76	122	97	58	48	137	335	44

CAL YR 1979 TOTAL 8218.60 MEAN 22.5 MAX 350 MIN .30 AC-FT 16300
WTR YR 1980 TOTAL 667.54 MEAN 1.82 MAX 7.1 MIN .21 AC-FT 1320

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, ND

LOCATION.--Lat 46°06'40", long 103°02'20", in SE¼NE¼ sec.3, T.130 N., R.99 W., Bowman County, Hydrologic Unit 10130301, on left bank 46 ft (14 m) downstream from Chicago, Milwaukee, St. Paul, Pacific Railway bridge, and 1.8 mi (2.9 km) east of Gascoyne.

DRAINAGE AREA.--15.7 mi² (40.7 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR ND-76-1: 1975.

GAGE.--Water-stage recorder. Altitude of gage is 2,725 ft (831 m), from topographic map.

REMARKS.--Records fair. Some regulation by strip mine above station.

AVERAGE DISCHARGE.--6 years, 1.53 ft³/s (0.043 m³/s), 1,110 acre-ft/yr (1.37 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100 ft³/s (2.83 m³/s) May 9, 1975, gage height, 8.41 ft (2.563 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4.3 ft³/s (0.12 m³/s) Oct. 20, gage height, 6.74 ft (2.054 m); maximum gage height, 7.40 ft (2.256 m) Mar. 11, backwater from ice; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	.44	.23	.27	.00	.00	2.7	.11	.00	.00	.00	.00
2	.18	.40	.25	.25	.00	.00	2.7	.11	.00	.00	.00	.00
3	.26	.36	.28	.23	.00	.00	2.6	.11	.00	.00	.00	.00
4	.39	.33	.33	.22	.00	.00	2.3	.10	.00	.00	.00	.00
5	.35	.29	.36	.19	.00	.00	2.7	.10	.29	.00	.00	.00
6	.26	.23	.37	.14	.00	.00	2.6	.10	.63	.00	.00	.00
7	.21	.17	.36	.07	.00	.01	2.6	.10	.52	.00	.00	.00
8	.26	.14	.33	.02	.00	.01	1.9	.10	.39	.00	.00	.00
9	.35	.16	.36	.01	.00	.02	1.6	.08	.23	.00	.00	.00
10	.35	.21	.40	.00	.00	.03	1.4	.08	.18	.00	.00	.00
11	.29	.25	.35	.00	.00	.20	.97	.07	.29	.00	.00	.00
12	.29	.27	.28	.00	.00	.45	.69	.07	.32	.00	.00	.00
13	.35	.30	.26	.00	.00	.95	.52	.07	.32	.00	.00	.00
14	.35	.32	.24	.00	.00	1.1	.52	.07	.32	.00	.00	.00
15	.29	.35	.22	.00	.00	1.3	.39	.05	.32	.00	.00	.00
16	.26	.39	.16	.00	.00	1.4	.58	.04	.21	.00	.00	.00
17	.35	.42	.10	.00	.00	1.6	.47	.04	.16	.00	.00	.00
18	.39	.45	.16	.00	.00	1.7	.35	.04	.14	.00	.00	.00
19	.47	.36	.30	.00	.00	1.8	.32	.04	.11	.00	.00	.00
20	3.8	.28	.33	.00	.00	1.9	.26	.04	.10	.00	.00	.00
21	1.4	.27	.32	.00	.00	2.0	.21	.03	.10	.00	.00	.00
22	.82	.27	.31	.00	.00	2.1	.16	.01	.10	.00	.00	.00
23	.76	.27	.28	.00	.00	2.1	.11	.00	.07	.00	.00	.00
24	.58	.28	.25	.00	.00	2.2	.11	.00	.04	.00	.00	.00
25	.35	.28	.28	.00	.00	2.3	.11	.00	.02	.00	.00	.00
26	.32	.28	.29	.00	.00	2.4	.10	.00	.00	.00	.00	.00
27	.35	.27	.30	.00	.00	2.6	.08	.00	.00	.00	.00	.00
28	.58	.24	.30	.00	.00	3.0	.08	.00	.00	.00	.00	.00
29	.58	.22	.30	.00	.00	3.1	.10	.00	.00	.00	.00	.00
30	.52	.21	.29	.00	---	3.2	.10	.00	.00	.00	.00	.00
31	.47	---	.28	.00	---	3.0	---	.00	---	.00	.00	---
TOTAL	16.36	8.71	8.87	1.40	.00	40.47	29.33	1.56	4.86	.00	.00	.00
MEAN	.53	.29	.29	.045	.000	1.31	.98	.050	.16	.000	.000	.000
MAX	3.8	.45	.40	.27	.00	3.2	2.7	.11	.63	.00	.00	.00
MIN	.18	.14	.10	.00	.00	.00	.08	.00	.00	.00	.00	.00
AC-FT	32	17	18	2.8	.00	80	58	3.1	9.6	.00	.00	.00

CAL YR 1979 TOTAL 856.40 MEAN 2.35 MAX 50 MIN .00 AC-FT 1700
WTR YR 1980 TOTAL 111.56 MEAN .30 MAX 3.8 MIN .00 AC-FT 221

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE, WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)
OCT												
02...	1535	.18	4750	--	--	13.0	--	--	--	--	--	--
04...	1515	.43	5200	8.7	25.0	11.0	10.9	108	40	40	970	390
NOV												
08...	0930	.14	5750	8.4	-5.5	2.0	13.8	111	85	110	1300	680
DEC												
03...	1405	.28	5750	8.2	9.0	2.0	12.1	95	K8	230	1100	390
MAR												
13...	1410	.95	--	--	7.0	.0	--	--	--	--	--	--
22...	1250	2.1	3350	8.4	2.0	.5	10.6	81	K2	150	660	330
APR												
24...	1215	.10	5700	8.3	21.5	15.0	9.3	99	K1	25	1300	680
MAY												
20...	0730	.04	7100	8.4	15.5	16.5	4.7	53	K4	56	1400	670
JUN												
17...	0720	.15	6950	8.6	16.5	18.0	5.0	58	K13	61	970	340

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE (MG/L AS HCO3) (00440)	CARBONATE (MG/L AS CO3) (00445)	ALKALINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT												
02...	--	--	--	--	--	--	--	--	--	--	--	--
04...	140	150	1100	71	15	16	649	31	584	2.3	2500	16
NOV												
08...	170	210	1000	62	12	20	717	12	610	4.7	2700	18
DEC												
03...	170	160	1100	84	15	15	871	0	710	8.8	2700	17
MAR												
13...	--	--	--	--	--	--	--	--	--	--	--	--
22...	113	90	580	66	11	9.4	383	7	326	2.5	1600	9.1
APR												
24...	180	200	1000	63	12	15	761	0	624	6.1	2600	17
MAY												
20...	178	240	1400	68	19	20	861	16	732	5.7	3600	23
JUN												
17...	90	180	1300	74	18	14	692	36	627	3.1	3300	21

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT												
02...	--	--	--	--	--	--	--	--	--	--	--	--
04...	1.3	1.4	4250	4280	5.78	4.93	.09	--	.150	.18	.74	.89
NOV												
08...	1.0	4.3	4830	4490	6.57	1.83	.00	.00	.180	.22	1.3	1.5
DEC												
03...	1.1	7.0	4710	4600	6.41	3.56	.34	.19	.080	.10	1.2	1.3
MAR												
13...	--	--	--	--	--	--	--	--	--	--	--	--
22...	.7	7.0	2600	2610	3.54	14.7	.08	.10	.180	.22	1.0	1.2
APR												
24...	1.1	1.6	5040	4390	6.85	1.36	.00	.00	.110	.13	1.6	1.7
MAY												
20...	1.3	.6	6300	5910	8.57	.68	.02	.01	.330	.40	1.6	1.9
JUN												
17...	1.5	4.2	5750	5290	7.82	2.33	.00	.00	.300	.36	2.3	2.6

K - Results based on colony count outside the acceptable range (non-ideal colony count).

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, TOTAL (MG/L AS PO4) (71886)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)
OCT											
02...	--	--	--	--	--	--	--	--	--	--	--
04...	.98	4.3	.070	.21	.020	--	--	--	--	--	--
NOV											
08...	1.5	6.6	.050	.15	.000	--	--	--	--	--	--
DEC											
03...	1.6	7.3	.060	.18	.020	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	1.3	5.7	.090	.28	.030	0	2	0	16	200	200
APR											
24...	1.7	7.5	.110	.34	.050	--	--	--	--	--	--
MAY											
20...	1.9	8.5	.120	.37	.060	30	4	0	10	100	50
JUN											
17...	2.6	12	.660	2.0	.010	--	--	--	--	--	--

DATE	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA) (01008)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BERYLLIUM, SUSPENDED RECOV. (UG/L AS BE) (01011)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01013)	BORON, DISSOLVED (UG/L AS B) (01020)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01029)
OCT											
02...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	3100	--	--	--	--
NOV											
08...	--	--	--	--	--	--	2900	--	--	--	--
DEC											
03...	--	--	--	--	--	--	2700	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	50	140	0	0	<3	1	1300	0	0	0	9
APR											
24...	--	--	--	--	--	--	3100	--	--	--	--
MAY											
20...	50	200	0	--	<3	1	4400	0	0	0	11
JUN											
17...	--	--	--	--	--	--	3800	--	--	--	--

DATE	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO) (01038)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU) (01043)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI) (01132)	LITHIUM SUSPENDED RECOVERABLE (UG/L AS LI) (01131)
OCT											
02...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	30	--	--
NOV											
08...	--	--	--	--	--	--	--	--	30	--	--
DEC											
03...	--	--	--	--	--	--	--	--	60	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	1	0	<8	0	2	0	<25	16	170	50	0
APR											
24...	--	--	--	--	--	--	--	--	50	--	--
MAY											
20...	0	--	<8	10	6	--	<25	25	70	140	0
JUN											
17...	--	--	--	--	--	--	--	--	170	--	--

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG) (71921)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	MOLYBDENUM, SUSPENDED RECOV. (UG/L AS MO) (01061)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)
OCT											
02...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
03...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	55	100	0	150	.0	.0	.0	.04	3	0	<25
APR											
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
20...	140	220	0	230	.2	.0	.2	.04	3	--	<25
JUN											
17...	--	--	--	--	--	--	--	--	--	--	--

DATE	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G) (01063)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI) (01068)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G) (01148)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
OCT											
02...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
03...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
22...	0	0	0	1	20	0	0	0	0	2800	<8.0
APR											
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
20...	21	21	20	1	30	0	0	0	0	5500	<8.0
JUN											
17...	--	--	--	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN) (01093)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)
OCT							
04...	--	--	--	--	--	--	--
NOV							
08...	--	--	--	--	--	--	--
DEC							
03...	--	--	--	--	--	--	--
MAR							
13...	--	--	--	--	--	--	--
22...	20	0	23	80	<33	.5	<16
APR							
24...	--	--	--	--	--	--	--
MAY							
20...	30	--	<8	75	<87	<.4	<35
JUN							
17...	--	--	--	--	--	--	--

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT							
04...	--	--	--	35	.9	84	.10
NOV							
08...	--	--	--	52	.5	79	.03
DEC							
03...	--	--	--	43	.8	167	.13
MAR							
13...	--	--	--	--	--	150	.38
22...	1.1	<16	1.2	22	.5	4	.02
APR							
24...	--	--	--	41	.4	138	.04
MAY							
20...	1.6	<33	1.6	60	.5	53	.01
JUN							
17...	--	--	--	77	.3	11	.00

DATE	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
MAY										
20...	23	31	42	49	51	60	72	85	91	100

DATE	LENGTH OF EXPO-SURE (DAYS) (00022)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)
NOV					
08...	35	.250	.000	.550	.710

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO JUNE 1980

DATE	OCT 4,79	NOV 8,79	DEC 3,79	MAR 22,80
TIME	1515	0930	1405	1250
TOTAL CELLS/ML	29000	25000	2300	39000
DIVERSITY: DIVISION	0.7	0.3	1.1	0.7
.CLASS	0.7	0.7	1.2	0.7
..ORDER	0.9	0.8	1.6	0.8
...FAMILY	0.9	0.8	1.7	0.8
....GENUS	0.9	0.8	1.8	0.8

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...OOCYSTACEAE								
....ANKISTRODESMUS	260	1	480	2	230	10	250	1
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	--	-	46	2	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	720	3	1400#	62	1600	4
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	23000#	79	21000#	86	--	-	4000	10
..PENNALES								
...NAVICULACEAE								
....NAVICULA	510	2	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	240	1	23	1	--	-
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	23	1	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...CHROMULINACEAE								
....CHRYSOCOCCUS	--	-	2100	9	320	14	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	33000#	85
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	210	9	--	-
....PHACUS	--	-	--	-	23	1	--	-
....TRACHELOMONAS	5100#	18	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06355310 BUFFALO CREEK TRIBUTARY NEAR GASCOYNE, ND--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO JUNE 1980

DATE	APR 24,80	MAY 20,80	JUN 17,80
TIME	1215	0730	0720
TOTAL CELLS/ML	13000	210	100
DIVERSITY: DIVISION	1.3	0.5	0.5
.CLASS	1.5	0.5	0.5
..ORDER	1.7	0.5	1.1
...FAMILY	1.7	0.7	1.5
....GENUS	1.7	0.7	1.5

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	8600#	65	--	-	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	120	1	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	1300	10	--	-	13	13
..PENNALES						
...NAVICULACEAE						
....NAVICULA	--	-	13	6	13	13
...NITZSCHIACEAE						
....NITZSCHIA	470	4	13	6	64#	63
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
...CHROMULINACEAE						
....CHRYSOCOCCUS	710	5	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	1800	13	--	-	--	-
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	240	2	180#	88	13	13
....PHACUS	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06439980 LAKE OAHE NEAR PIERRE, SD

LOCATION.--Lat 44°27'30", long 100°23'29", in NE¼ sec.1, T.111 N., R.80 W., 5th princpal meridian, Hughes County, Hydrologic Unit 10130105, in Pier A of Control Tower No. 1 of powerhouse intake structure of dam on Missouri River, 6.0 mi (9.7 km) northwest of Pierre, 7.1 mi (11.4 km) upstream from Bad River, and at mile 1,072.3 (1,725.3 km).

DRAINAGE AREA.--243,500 mi^2 (630,700 km^2), approximately.

PERIOD OF RECORD.--August 1958 to current year (monthend contents only). Prior to October 1967, published as Oahe Reservoir near Pierre.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 14, 1959, nonrecording gages at various locations upstream from outlet works, Jan. 14, 1959, to Sept. 30, 1962, recorder in Tower No. 1 of outlet works, all at same datum.

REMARKS.--Reservoir is formed by an earthfill dam; storage began in August 1958. Maximum capacity, 23,630,000 acre-ft (29,100 hm^3) below elevation 1,620.0 ft (493.78 m), top of spillway gates. Normal maximum, 22,530,000 acre-ft (27,800 hm^3) below 1,617.0 ft (492.86 m), of which about 2,390,000 acre-ft (2,950 hm^3) is designated for flood control. Inactive storage, 5,538,000 acre-ft (6,830 hm^3) below elevation 1,540.0 ft (469.39 m). Dead storage, 2,000 acre-ft (2.47 hm^3) below elevation 1,425.0 ft (434.34 m), invert of lowest outlet tunnel. Figures given herein represent elevations at powerhouse intake structure and total contents adjusted for wind effect.

The spillway consists of a gated chute with flat crest at elevation 1,596.5 ft (486.61 m), 8 gates, 50 by 23.5 ft (15.2 x 7.2 m) each; design capacity, 300,000 ft^3/s (8,500 m^3/s). The outlet works consist of 7 turbines with a generating capacity of 85,000 kilowatts each. Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevation and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 22,681,000 acre-ft (28,000 hm^3) Aug. 22, 1975, elevation, 1,617.9 ft (493.14 m), affected by wind; minimum since initial filling, 15,112,000 acre-ft (18,600 hm^3) Dec. 10, 12-14, 1977, elevation, 1,593.0 ft (485.55 m), affected by ice.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 20,368,000 acre-ft (25,100 hm^3) Oct. 1, elevation, 1,611.02 ft (491.039 m); maximum elevation, 1,611.52 ft (491.191 m) Oct. 4; minimum contents, 16,370,000 acre-ft (20,200 hm^3) Sept. 30, elevation, 1,597.73 ft (486.988 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,611.55	20,390,000	—
Oct. 31	1,608.15	19,379,000	-1,011,000
Nov. 30	1,606.02	18,775,000	-604,000
Dec. 31	1,605.14	18,523,000	-252,000
CAL YR 1979	--	—	+181,000
Jan. 31	1,604.26	18,241,000	-282,000
Feb. 29	1,606.18	18,820,000	+579,000
Mar. 31	1,607.94	19,394,000	+574,000
Apr. 30	1,608.09	19,411,000	+17,000
May 31	1,605.88	18,737,000	-674,000
June 30	1,604.98	18,377,000	-360,000
July 31	1,603.08	17,852,000	-525,000
Aug. 31	1,599.96	16,957,000	-895,000
Sept. 30	1,597.96	16,370,000	-587,000
WTR YR 1980	--	—	-4,020,000

Note.--Reservoir frozen over Jan. 29 to Apr. 6.

06467600 JAMES RIVER NEAR MANFRED, ND

LOCATION.--Lat 47°38'40", long 99°49'40", near midpoint of north line sec.15, T.148 N., R.72 W., Wells County, Hydrologic Unit 10160001, on right upstream wingwall of bridge on county highway, and 5 mi (8 km) southwest of Manfred.

DRAINAGE AREA.--253 mi² (655 km²), of which about 197 mi² (510 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1954 to August 1957 (annual maximum only), September 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,605.73 ft (489.427 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 16, 1957, crest-stage gage only on downstream side of bridge at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--23 years (1957-80), 3.41 ft³/s (0.0966 m³/s), 2,470 acre-ft/yr (3.05 hm³/yr); median of yearly mean discharges, 2.5 ft³/s (0.071 m³/s), 1,800 acre-ft/yr (2.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 2,000 ft³/s (56.6 m³/s) Apr. 18 or 19, 1979, gage height, 9.2 ft (2.80 m), from highwater mark, backwater from snow; no flow for long periods each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 622 ft³/s (17.6 m³/s) June 5, gage height, 6.53 ft (1.990 m), only peak above base of 30 ft³/s (0.85 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.02	.01	.00	.00	.00	15	.66	.18	3.1	.04	3.9
2	.00	.02	.01	.00	.00	.00	13	.62	.18	2.6	.05	4.2
3	.00	.02	.01	.00	.00	.00	11	.66	.14	2.0	.04	4.1
4	.00	.02	.01	.00	.00	.00	11	.62	.35	1.6	.07	4.0
5	.00	.02	.01	.00	.00	.00	10	.54	351	1.5	.12	3.9
6	.00	.02	.01	.00	.00	.00	9.6	.46	300	1.0	.24	3.9
7	.00	.02	.01	.00	.00	.00	9.2	.38	202	.86	.50	3.8
8	.00	.02	.01	.00	.00	.00	8.8	.35	140	.66	.58	3.7
9	.00	.02	.01	.00	.00	.00	8.5	.32	123	.50	.78	3.4
10	.00	.02	.01	.00	.00	.00	8.0	.24	101	.38	1.1	3.2
11	.00	.02	.00	.00	.00	.00	7.5	.18	84	.29	4.2	3.2
12	.01	.02	.00	.00	.00	.00	7.0	.12	70	.22	8.1	3.2
13	.01	.02	.00	.00	.00	.00	6.2	.10	57	.16	7.5	3.2
14	.01	.02	.00	.00	.00	.00	5.6	.10	46	.10	6.0	2.5
15	.01	.02	.00	.00	.00	.00	5.2	.09	38	.20	5.6	2.4
16	.02	.02	.00	.00	.00	.00	4.8	.09	33	.50	5.2	2.4
17	.01	.03	.00	.00	.00	.50	4.3	.09	31	.38	5.1	2.4
18	.01	.03	.00	.00	.00	1.0	4.3	.08	32	.38	4.9	2.3
19	.03	.03	.00	.00	.00	1.5	4.1	.08	29	.50	4.8	2.3
20	.03	.03	.00	.00	.00	2.0	3.4	.07	25	.74	5.1	2.4
21	.02	.03	.00	.00	.00	2.7	3.1	.06	21	.74	5.7	2.3
22	.01	.03	.00	.00	.00	3.5	2.8	.06	16	.78	6.5	2.3
23	.01	.03	.00	.00	.00	4.0	2.8	.05	12	.78	5.9	2.3
24	.01	.03	.00	.00	.00	5.0	2.6	.04	10	.70	6.0	2.2
25	.01	.04	.00	.00	.00	6.0	2.3	.03	8.0	.42	5.6	2.0
26	.02	.04	.00	.00	.00	7.0	1.8	.03	6.4	.20	4.9	1.9
27	.03	.04	.00	.00	.00	8.0	1.4	.02	5.7	.16	4.4	1.8
28	.02	.03	.00	.00	.00	9.0	1.2	.05	5.1	.10	4.1	1.8
29	.02	.02	.00	.00	.00	10	.94	.06	4.2	.08	3.9	1.7
30	.02	.02	.00	.00	---	12	.82	.06	3.7	.08	3.8	1.4
31	.03	---	.00	.00	---	14	---	.07	---	.06	3.4	---
TOTAL	.34	.75	.10	.00	.00	86.20	176.26	6.38	1754.95	21.77	114.22	84.1
MEAN	.011	.025	.003	.000	.000	2.78	5.88	.21	58.5	.70	3.68	2.80
MAX	.03	.04	.01	.00	.00	14	15	.66	351	3.1	8.1	4.2
MIN	.00	.02	.00	.00	.00	.00	.82	.02	.14	.06	.04	1.4
AC-FT	.7	1.5	.2	.00	.00	171	350	13	3480	43	227	167

CAL YR 1979 TOTAL 4191.20 MEAN 11.5 MAX 1000 MIN .00 AC-FT 8310
WTR YR 1980 TOTAL 2245.07 MEAN 6.13 MAX 351 MIN .00 AC-FT 4450

06468170 JAMES RIVER NEAR GRACE CITY, ND

LOCATION.--Lat 47°33'29", long 98°51'45", in NW¼NW¼NW¼ sec.17, T.147 N., R.64 W., Foster County, Hydrologic Unit 10160001, on left bank on downstream side of county highway bridge, and 2.5 mi (4.0 km) northwest of Grace City.

DRAINAGE AREA.--1,060 mi^2 (2,750 km^2), approximately, of which about 650 mi^2 (1,680 km^2) is probably noncontributing.

PERIOD OF RECORD.--June 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,457.60 ft (444.276 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--12 years, 28.3 ft^3/s (0.801 m^3/s), 20,500 acre-ft/yr (25.3 hm^3/yr); median of yearly mean discharges, 18 ft^3/s (0.51 m^3/s), 13,000 acre-ft/yr (16 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,100 ft^3/s (87.8 m^3/s) Apr. 13, 1969, gage height, 12.00 ft (3.658 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 235 ft^3/s (6.66 m^3/s) June 16, gage height, 7.08 ft (2.158 m), only peak above base of 200 ft^3/s (5.66 m^3/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	.21	.36	.20	.00	.00	48	4.6	1.1	55	4.8	72
2	.26	.33	.33	.20	.00	.00	50	4.4	1.1	52	4.4	79
3	.20	.35	.33	.18	.00	.00	32	4.3	1.2	50	4.0	87
4	.21	.43	.36	.18	.00	.00	32	4.1	2.0	44	5.0	89
5	.17	.47	.44	.16	.00	.00	34	3.7	3.2	42	6.0	94
6	.17	.51	.43	.14	.00	.00	38	3.5	3.4	39	6.0	87
7	.17	.44	.41	.08	.00	.00	34	3.4	3.4	35	7.0	76
8	.18	.43	.41	.03	.00	.00	31	3.4	3.5	33	6.0	64
9	.18	.43	.40	.00	.00	.00	28	3.5	3.0	31	5.0	55
10	.19	.33	.35	.00	.00	.00	27	3.0	98	29	5.0	47
11	.22	.35	.30	.00	.00	.00	27	2.8	172	26	4.0	43
12	.30	.39	.27	.00	.00	.00	28	2.8	176	21	3.2	43
13	.27	.39	.25	.00	.00	.00	29	2.8	163	19	2.9	42
14	.28	.43	.25	.00	.00	.00	26	2.7	176	20	2.8	41
15	.22	.43	.25	.00	.00	.00	25	2.5	212	18	2.8	40
16	.36	.47	.24	.00	.00	.00	23	2.3	230	15	3.2	37
17	.33	.47	.22	.00	.00	.00	20	1.9	229	13	3.0	35
18	.22	.49	.22	.00	.00	.00	17	1.7	217	11	2.9	31
19	.30	.65	.22	.00	.00	.00	15	1.6	193	9.7	2.7	32
20	.23	.68	.22	.00	.00	2.0	13	1.5	172	11	3.6	30
21	.20	.71	.22	.00	.00	5.0	12	1.2	151	11	20	27
22	.22	.58	.22	.00	.00	4.0	9.7	.98	132	10	58	24
23	.25	.52	.22	.00	.00	3.0	9.1	.88	117	9.4	70	22
24	.28	.48	.22	.00	.00	5.0	8.5	.68	101	8.7	76	22
25	.31	.47	.20	.00	.00	8.7	7.5	.68	90	8.0	77	20
26	.43	.47	.20	.00	.00	13	6.9	.62	80	7.5	74	20
27	.34	.50	.20	.00	.00	13	6.4	.39	76	7.0	69	18
28	.36	.45	.20	.00	.00	13	5.6	.74	66	6.5	66	16
29	.36	.43	.20	.00	.00	21	5.1	1.1	65	6.0	63	14
30	.38	.43	.20	.00	---	39	4.6	1.0	60	5.5	65	12
31	.29	---	.20	.00	---	33	---	1.1	---	5.0	71	---
TOTAL	8.14	13.72	8.54	1.17	.00	159.70	652.4	69.87	2997.9	658.3	793.3	1319
MEAN	.26	.46	.28	.038	.000	5.15	21.7	2.25	99.9	21.2	25.6	44.0
MAX	.43	.71	.44	.20	.00	39	50	4.6	230	55	77	94
MIN	.17	.21	.20	.00	.00	.00	4.6	.39	1.1	5.0	2.7	12
AC-FT	16	27	17	2.3	.00	317	1290	139	5950	1310	1570	2620

CAL YR 1979 TOTAL 23685.31 MEAN 64.9 MAX 1960 MIN .00 AC-FT 46980
WTR YR 1980 TOTAL 6682.04 MEAN 18.3 MAX 230 MIN .00 AC-FT 13250

06468500 JAMES RIVER NEAR PINGREE, ND

LOCATION.--Lat 47°08'30", long 98°47'00", in SW¼SW¼ sec.3, T.142 N., R.64 W., Stutsman County, Hydrologic Unit 10160001, on right bank 500 ft (152 m) upstream from dam at outlet of DePuy Marsh, 6.5 mi (10.5 km) southeast of Pingree, and 6.25 mi (10.06 km) northeast of Buchanan.

DRAINAGE AREA.--1,670 mi² (4,330 km²), approximately, of which about 990 mi² (2,560 km²) is probably noncontributing.

PERIOD OF RECORD.--Water years 1965, 1979 to current year.

REMARKS.--Current sampling site is located at bridge 2 mi (3 km) upstream from former stream gaging station.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
OCT 03...	1740	640	8.3	11.0	60	--	--	220	0	45	27	47
JAN 04...	1245	850	8.0	2.0	40	7.5	53	340	54	70	41	64
APR 15...	1400	590	8.1	6.5	5	11.9	97	230	51	48	27	40
JUL 23...	1750	700	8.4	23.5	70	--	--	240	12	44	32	59

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
OCT 03...	44	1.4	59	12	230	110	9.3	2	22	434	411	.59
JAN 04...	42	1.5	78	14	290	180	15	.2	23	587	583	.80
APR 15...	26	1.1	49	8.8	180	120	9.7	.1	.1	389	363	.53
JUL 23...	33	1.7	74	15	230	130	14	.3	19	473	453	.64

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT 03...	.00	.020	0	3	80	160	2	0	<3	1	<10
JAN 04...	.21	.020	1	1	90	160	<1	0	<3	0	<10
APR 15...	.01	.020	0	1	60	110	<1	0	<3	0	<10
JUL 23...	.00	.070	10	6	100	180	<1	10	<3	0	350

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT 03...	0	20	8	.0	<10	4	0	260	<1.0	<3	.01
JAN 04...	0	50	100	.0	<10	4	0	350	.0	<3	.00
APR 15...	0	30	110	.0	<10	0	0	260	.0	<3	.01
JUL 23...	2	40	350	.0	10	4	1	260	<6.0	<3	.00

06469000 JAMESTOWN RESERVOIR NEAR JAMESTOWN, ND

LOCATION.--Lat 46°55'50", long 98°42'23", in SE¼NW¼ sec.24, T.140 N., R.64 W., Stutsman County, Hydrologic Unit 10160001, on left bank in control house below Jamestown Dam on James River, 1.7 mi (2.7 km) north of Jamestown Post Office, and 3.3 mi (5.3 km) upstream from Pipestem Creek.

DRAINAGE AREA.--1,760 mi^2 (4,560 km^2), approximately, of which about 1,010 mi^2 (2,620 km^2) is probably noncontributing.

PERIOD OF RECORD.--November 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft (426.720 m) National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD. June 22, 1959 to June 3, 1971 at site 0.2 mi (0.3 km) upstream at same datum. Prior to June 22, 1959, nonrecording gages at different locations.

REMARKS.--Reservoir is formed by earth-fill dam, completed Oct. 1, 1953. Closure made May 7, 1953, and filling of dead storage started. Gates initially closed Feb. 8, 1954. Usable capacity, 229,470 acre-ft (283 hm^3) between elevations 1,400 ft (426.720 m), sill of outlet and 1,454 ft (443.179 m), crest of spillway. Dead storage below elevation 1,400 ft (426.720 m), 820 acre-ft (1.01 hm^3). Maximum design pool, 389,000 acre-ft (480 hm^3), elevation, 1,464.6 ft (446.410 m). Figures given herein represent total contents based on capacity table dated Oct. 1, 1965. Reservoir is used for flood control and municipal supply. Elevations are adjusted for wind effect.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 103,100 acre-ft (127 hm^3) May 1, 1969, elevation, 1,443.60 ft (440.009 m); minimum since initial filling of reservoir, 18,220 acre-ft (22.5 hm^3) Mar. 4, 5, 1965, elevation, 1,423.66 ft (433.932 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 34,160 acre-ft (42.1 hm^3) Oct. 1, elevation, 1,432.12 ft (436.510 m); minimum, 28,340 acre-ft (34.9 hm^3) Mar. 11, elevation, 1,429.52 ft (435.718 m).

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,432.12	34,160	-
Oct. 31	1,430.92	31,340	-2,820
Nov. 30	1,429.87	29,050	-2,290
Dec. 31	1,429.65	28,600	-450
CAL YR 1979	--	--	+880
Jan. 31	1,429.61	28,520	-80
Feb. 29	1,429.56	28,420	-100
Mar. 31	1,430.36	30,110	+1,690
Apr. 30	1,430.36	30,110	0
May 31	1,430.06	29,450	-660
June 30	1,429.95	29,220	-230
July 31	1,430.28	29,930	+710
Aug. 31	1,430.94	31,380	+1,450
Sept. 30	1,430.15	29,650	-1,730
WTR YR 1980	--	--	+4,510

06469400 PIPESTEM CREEK NEAR PINGREE, ND

LOCATION.--Lat 47°10'03", long 98°58'07", in NE¼NE¼NW¼ sec.31, T.143 N., R.65 W., Stutsman County, Hydrologic Unit 10160002, on right bank on downstream side of State Highway 36 bridge, and 3 mi (5 km) west of Pingree.

DRAINAGE AREA.--700 mi² (1,810 km²), of which about 440 mi² (1,140 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,500.63 ft (457.392 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--7 years, 22.8 ft³/s (0.646 m³/s), 16,520 acre-ft/yr (20.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,520 ft³/s (71.37 m³/s) Apr. 20, 1979, gage height, 11.60 ft (3.536 m), backwater from ice; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 95 ft³/s (2.69 m³/s) June 5, gage height, 5.91 ft (1.801 m); no peak above base of 100 ft³/s (2.83 m³/s); no flow Jan. 9 to Mar. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.21	.18	.17	.00	.00	37	6.9	2.1	9.0	1.2	15
2	.21	.18	.17	.17	.00	.00	32	6.3	1.7	9.0	1.2	13
3	.21	.12	.18	.17	.00	.00	29	6.0	1.7	9.0	1.2	12
4	.21	.12	.20	.17	.00	.00	26	5.8	2.0	8.8	2.0	13
5	.21	.12	.20	.15	.00	.00	24	6.1	54	7.2	5.0	16
6	.18	.15	.20	.10	.00	.00	22	4.9	63	6.5	8.0	20
7	.18	.15	.20	.05	.00	.00	20	4.3	52	6.3	11	21
8	.18	.15	.20	.02	.00	.00	19	3.6	34	5.3	7.0	20
9	.18	.15	.20	.00	.00	.00	18	4.3	20	5.0	4.0	17
10	.18	.12	.20	.00	.00	.00	17	5.6	15	4.6	2.0	16
11	.18	.12	.20	.00	.00	.00	16	3.7	11	3.8	1.6	17
12	.18	.12	.19	.00	.00	.00	15	3.9	9.7	3.5	1.3	19
13	.18	.15	.19	.00	.00	.00	15	3.4	9.1	2.8	1.0	23
14	.18	.15	.19	.00	.00	.00	14	3.5	9.0	2.4	.75	24
15	.18	.15	.18	.00	.00	.00	14	3.7	9.0	2.4	.64	25
16	.18	.18	.18	.00	.00	5.0	14	3.1	9.0	2.4	.65	24
17	.18	.21	.18	.00	.00	20	13	2.8	8.5	2.4	.61	24
18	.18	.25	.18	.00	.00	40	13	2.5	8.0	2.3	.62	30
19	.18	.21	.18	.00	.00	35	13	2.6	10	1.7	.53	32
20	.18	.18	.18	.00	.00	30	12	2.6	20	1.7	.70	31
21	.18	.18	.18	.00	.00	28	12	2.4	17	1.7	.70	26
22	.18	.18	.18	.00	.00	27	12	1.9	15	1.7	.73	23
23	.18	.18	.20	.00	.00	26	11	1.6	14	1.7	8.9	20
24	.18	.18	.20	.00	.00	24	11	1.4	13	1.6	5.2	18
25	.18	.16	.19	.00	.00	25	11	1.3	12	1.5	2.5	16
26	.15	.15	.19	.00	.00	26	10	1.6	11	1.4	1.9	15
27	.15	.18	.18	.00	.00	30	10	1.4	11	1.3	1.9	15
28	.15	.18	.18	.00	.00	34	9.0	1.9	12	1.3	1.8	13
29	.15	.18	.18	.00	.00	42	8.2	2.0	11	1.4	19	13
30	.15	.18	.18	.00	---	50	7.5	2.0	10	1.3	47	11
31	.15	---	.18	.00	---	42	---	1.9	---	1.2	22	---
TOTAL	5.59	4.94	5.82	1.00	.00	484.00	484.7	105.0	474.8	112.2	162.63	582
MEAN	.18	.16	.19	.032	.000	15.6	16.2	3.39	15.8	3.62	5.25	19.4
MAX	.25	.25	.20	.17	.00	50	37	6.9	63	9.0	47	32
MIN	.15	.12	.17	.00	.00	.00	7.5	1.3	1.7	1.2	.53	11
AC-FT	11	9.8	12	2.0	.00	960	961	208	942	223	323	1150

CAL YR 1979 TOTAL 18499.84 MEAN 50.7 MAX 2010 MIN .00 AC-FT 36690
WTR YR 1980 TOTAL 2422.68 MEAN 6.62 MAX 63 MIN .00 AC-FT 4810

06470000 JAMES RIVER AT JAMESTOWN, ND

LOCATION.--Lat 46°53'22", long 98°40'58", in NW¼NE¼ sec.6, T.139 N., R.63 W., Stutsman County, Hydrologic Unit 10160003, on left bank 200 ft (60 m) upstream from Interstate 94 bridge at southeast corner of Jamestown, and 3 mi (5 km) downstream from Pipestem Creek.

DRAINAGE AREA.--2,820 mi² (7,300 km²), approximately, of which about 1,650 mi² (4,270 km²) is probably noncontributing.

PERIOD OF RECORD.--June 1928 to September 1934, March to May 1935, August 1937 to September 1939, March 1943 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1239: 1938(M). WSP 1917: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,373.27 ft (418.573 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1949 to Sept. 30, 1965, at former bridge 0.5 mi (0.8 km) upstream at datum 2.00 ft (0.610 m) higher. See WSP 1729 or 1917 for history of changes prior to Oct. 1, 1949.

REMARKS.--Records fair. Flow regulated by Arrowwood, Jim, and Pipestem Lakes, and Jamestown Reservoir, combined capacity, 393,000 acre-ft (485 hm³). Regulation by Jamestown Reservoir (station 06469000) 6 mi (10 km) upstream since 1953 and by Pipestem Lake, capacity 147,000 acre-ft (181 hm³), since 1973.

AVERAGE DISCHARGE.--45 years (water years 1929-34, 1938-39, 1944-80), 59.1 ft³/s (1.674 m³/s), 42,820 acre-ft/yr (52.8 hm³/yr); median of yearly mean discharges, 29 ft³/s (0.82 m³/s), 21,000 acre-ft/yr (26 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,390 ft³/s (181 m³/s) May 13, 1950, gage height, 15.82 ft (4.822 m), site and datum then in use; no flow at times in 1933.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 273 ft³/s (7.73 m³/s) Oct. 31, gage height, 5.40 ft (1.646 m); minimum daily, 3.7 ft³/s (0.10 m³/s) Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	241	243	63	8.2	4.0	4.0	69	7.8	8.1	20	4.1	17
2	239	236	61	7.9	4.0	4.0	64	16	6.1	19	4.0	13
3	239	235	61	7.9	4.0	4.3	63	12	4.7	18	4.5	12
4	236	235	51	7.9	4.2	4.7	61	17	7.2	17	4.1	12
5	249	232	25	7.9	4.4	5.0	57	16	14	16	3.7	12
6	253	235	20	7.7	4.4	5.0	55	9.7	16	15	17	9.2
7	251	231	22	7.0	4.4	6.0	52	4.9	12	14	13	11
8	238	229	22	6.5	4.4	7.0	39	6.0	20	13	5.4	9.3
9	233	228	18	6.0	4.4	5.6	24	7.0	23	12	4.6	14
10	251	226	19	5.6	4.2	6.0	39	12	25	11	5.6	88
11	253	226	16	5.2	4.2	5.0	39	6.5	26	10	4.6	101
12	253	224	17	5.0	4.2	5.0	36	6.5	26	9.0	4.4	132
13	251	221	16	5.0	4.2	5.0	32	5.9	30	8.0	4.2	122
14	251	218	15	5.0	4.0	5.0	30	9.8	39	7.0	4.2	115
15	253	210	15	5.0	4.0	15	31	6.4	29	6.3	4.1	113
16	252	205	15	5.0	4.2	51	28	5.4	25	4.8	5.6	116
17	252	170	15	5.0	4.2	52	28	5.0	23	4.7	5.5	116
18	252	142	16	5.0	4.2	78	26	4.7	24	24	4.5	113
19	252	119	14	5.0	4.2	85	27	4.1	24	7.6	4.3	114
20	254	101	12	5.0	4.2	76	22	3.8	26	5.9	7.8	114
21	251	94	11	5.0	4.2	100	13	4.4	29	5.3	5.0	115
22	250	86	10	5.0	4.2	134	14	4.3	29	5.2	4.2	109
23	249	79	9.5	5.0	4.2	127	22	3.9	29	5.0	8.2	74
24	249	75	9.5	5.0	4.2	128	22	3.8	26	4.7	5.0	70
25	245	71	9.0	5.0	4.2	110	17	4.0	27	4.3	4.3	72
26	245	67	9.0	4.8	4.4	81	13	4.1	22	4.2	4.1	71
27	247	65	8.6	4.6	4.4	77	19	3.8	39	4.1	3.9	71
28	245	68	8.6	4.4	4.2	79	17	4.3	39	3.9	3.8	71
29	244	119	8.2	4.2	4.2	73	15	4.0	23	4.0	116	71
30	243	77	8.2	4.0	---	65	13	3.9	19	8.9	45	68
31	256	---	8.2	4.0	---	56	---	8.6	---	4.5	24	---
TOTAL	7677	4975	612.8	173.8	122.2	1458.6	987	215.6	690.1	296.4	338.7	2145.5
MEAN	248	166	19.8	5.61	4.21	47.1	32.9	6.95	23.0	9.56	10.9	71.5
MAX	256	243	63	8.2	4.4	134	69	17	39	24	116	132
MIN	233	65	8.2	4.0	4.0	4.0	13	3.8	4.7	3.9	3.7	9.2
AC-FT	15230	9870	1220	345	242	2890	1960	428	1370	588	672	4260

CAL YR 1979 TOTAL 68560.6 MEAN 188 MAX 528 MIN 2.0 AC-FT 136000
WTR YR 1980 TOTAL 19692.7 MEAN 53.8 MAX 256 MIN 3.7 AC-FT 39060

06470500 JAMES RIVER AT LA MOURE, ND

LOCATION.--Lat 46°21'20", long 98°18'15", in NE¼NE¼ sec.11, T.133 N., R.61 W., LaMoure County, Hydrologic Unit 10160003, on left bank 80 ft (24 m) downstream from bridge on State Highway 13, 0.5 mi (0.8 km) west of LaMoure, and 12 mi (19 km) upstream from Cottonwood Creek.

DRAINAGE AREA.--4,390 mi² (11,370 km²), approximately, of which about 2,600 mi² (6,730 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to July 1903 (gage-height record only), April 1950 to current year. Gage-height records for 1902-11 are contained in reports of the National Oceanic and Atmospheric Administration.

REVISED RECORDS.--WSP 1917: Drainage area.

GAGE.--Water-stage recorder and rubble-masonry control. Datum of gage is 1,290.00 ft (393.192 m) National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to Apr. 19, 1950.

REMARKS.--Records fair. Flow regulated by Arrowwood, Jim, and Pipestem Lakes, and Jamestown Reservoir, combined capacity, 393,000 acre-ft (485 hm³). Regulation by Jamestown Reservoir (station 06469000) 85 mi (137 km) upstream since 1953 and by Pipestem Lake, capacity 147,000 acre-ft (181 hm³), since 1973.

AVERAGE DISCHARGE.--30 years (water years 1951-80), 93.3 ft³/s (2.642 m³/s), 67,600 acre-ft/yr (83.4 hm³/yr); median of yearly mean discharges, 66 ft³/s (1.87 m³/s), 47,800 acre-ft/yr (59 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,800 ft³/s (193 m³/s) Apr. 14, 1969, gage height, 16.17 ft (4.929 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Prior to flood of Apr. 14, 1969, a long-time resident said that the flood of May 16, 1950 was the highest since 1881, with stage in either 1942 or 1943 being almost as high owing to large ice jam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 382 ft³/s (10.8 m³/s) Mar. 22, gage height, 8.05 ft (2.454 m); minimum daily, 4.6 ft³/s (0.13 m³/s) Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	240	242	71	31	13	14	172	38	20	32	6.6	198
2	247	269	76	29	13	15	168	34	17	24	6.8	139
3	235	258	85	27	13	16	164	33	16	24	4.6	94
4	220	252	83	27	13	17	154	34	31	28	10	57
5	241	246	87	26	15	18	168	34	43	19	11	39
6	218	238	86	25	16	19	190	32	38	19	9.9	34
7	227	246	83	24	16	21	186	29	36	21	13	28
8	234	213	64	22	17	20	159	28	34	14	12	35
9	228	183	56	20	19	20	130	29	32	16	11	20
10	232	165	50	20	19	24	91	41	26	17	22	17
11	233	181	46	20	19	25	84	20	22	18	22	19
12	233	188	48	20	18	23	54	23	33	13	20	24
13	233	243	41	22	18	19	54	25	41	12	20	44
14	241	272	35	22	17	17	65	22	36	16	16	75
15	241	275	35	19	19	19	54	22	36	12	14	105
16	249	267	45	19	19	23	54	19	39	15	15	102
17	238	251	48	19	18	23	54	23	43	13	23	100
18	247	240	35	20	17	54	43	22	41	14	13	95
19	240	248	31	20	17	61	54	18	34	13	14	100
20	248	197	31	20	17	177	45	17	30	15	20	101
21	244	171	33	20	17	262	43	18	31	18	19	103
22	247	129	36	20	18	372	54	15	27	17	13	106
23	247	100	37	22	19	355	34	16	22	16	15	96
24	250	95	36	25	19	289	34	17	33	19	18	106
25	246	96	34	25	22	262	34	13	32	16	17	98
26	251	109	33	24	23	256	30	21	26	12	9.9	81
27	255	111	33	23	19	256	36	21	30	14	10	71
28	252	103	33	22	18	240	37	18	38	13	10	74
29	258	88	31	17	16	215	36	22	26	7.4	17	83
30	261	76	31	14	---	200	37	19	31	13	15	74
31	299	---	31	13	---	190	---	16	---	9.9	66	---
TOTAL	7535	5752	1504	677	504	3522	2518	739	944	510.3	493.8	2318
MEAN	243	192	48.5	21.8	17.4	114	83.9	23.8	31.5	16.5	15.9	77.3
MAX	299	275	87	31	23	372	190	41	43	32	66	198
MIN	218	76	31	13	13	14	30	13	16	7.4	4.6	17
AC-FT	14950	11410	2980	1340	1000	6990	4990	1470	1870	1010	979	4600

CAL YR 1979 TOTAL 110731.8 MEAN 303 MAX 3690 MIN 7.4 AC-FT 219600
WTR YR 1980 TOTAL 27017.1 MEAN 73.8 MAX 372 MIN 4.6 AC-FT 53590

06470500 JAMES RIVER AT LA MOURE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1953 to September 1975, October 1976 to current year.
SPECIFIC CONDUCTANCE: October 1976 to current year.

INSTRUMENTATION.--Temperature recorder from June 1953 to September 1975, November 1976 to September 1978.

REMARKS.--Due to recorder malfunctions, continuous water temperature data does not conform to acceptable accuracy standards. Once daily observations recorded by a local observer are being published in lieu of the recorder data.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 33.0°C July 12, 13, 1957; July 23, 1977; minimum, 0.0°C on many days during winter months.
SPECIFIC CONDUCTANCE: Maximum daily, 1,880 micromhos Jan. 31, 1979; minimum daily, 200 micromhos Mar. 24, 25, and 26, 1978.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum daily, 31.0°C July 12; minimum, 0.5°C on many days during the winter.
SPECIFIC CONDUCTANCE: Maximum daily, 1,300 micromhos Mar. 1, 2; minimum daily, 380 micromhos Apr. 1.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT											
02...	1610	225	485	8.3	14.0	30	10.8	110	190	18	44
NOV											
06...	1700	245	540	8.3	.5	25	12.8	92	190	13	46
27...	1715	111	650	8.1	.5	20	14.4	104	270	32	66
JAN											
03...	1230	E27	1010	8.2	1.0	10	17.3	123	410	40	100
FEB											
05...	1545	E15	1260	7.7	1.0	15	14.4	102	150	0	35
MAR											
06...	1300	E22	1210	7.6	.5	5	8.7	61	440	99	110
25...	1720	E250	360	7.3	.5	80	5.2	36	120	33	30
APR											
01...	1545	183	580	--	1.5	--	--	--	--	--	--
29...	1820	E53	800	8.3	18.0	40	7.3	78	310	110	76
JUN											
04...	1100	63	820	8.8	20.0	30	7.6	84	310	36	65
JUL											
17...	1100	6.4	1000	8.5	24.0	60	5.9	69	320	220	71
AUG											
12...	1320	16	950	8.5	21.0	20	8.6	96	310	20	68
SEP											
09...	1330	35	490	8.7	20.5	15	7.8	90	160	32	40

E - Estimated.

06470500 JAMES RIVER AT LA MOURE, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT										
02...	19	31	25	1.0	41	10	170	85	7.9	.1
NOV										
06...	19	36	27	1.1	47	11	180	96	12	.1
27...	26	45	26	1.2	56	11	240	120	16	.2
JAN										
03...	39	76	28	1.6	86	9.9	370	190	16	.2
FEB										
05...	14	260	79	9.4	260	4.9	500	160	15	.3
MAR										
06...	40	100	33	2.1	110	10	340	240	54	.3
25...	11	24	28	1.0	36	12	87	79	14	.0
APR										
01...	--	--	--	--	--	--	--	--	--	--
29...	30	56	27	1.4	67	11	200	200	24	.2
JUN										
04...	35	92	38	2.3	100	12	270	170	47	.3
JUL										
17...	35	100	39	2.4	110	12	--	180	51	.5
AUG										
12...	34	90	38	2.2	100	11	290	150	48	.3
SEP										
09...	15	35	31	1.2	43	8.1	130	76	17	.2

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	BORON, DIS-SOLVED (UG/L AS B) (01020)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
OCT										
02...	2.8	300	302	.41	182	.04	.080	90	46	28
NOV										
06...	5.5	355	336	.48	235	.46	.080	140	17	11
27...	9.8	411	440	.56	123	.38	.040	130	8	2.4
JAN										
03...	10	708	667	.96	--	.79	.040	230	26	--
FEB										
05...	44	705	835	.96	--	.04	.280	650	15	--
MAR										
06...	23	839	785	1.14	--	.69	.070	360	--	--
25...	8.6	240	234	.33	--	.73	.460	140	--	--
APR										
01...	--	--	--	--	--	--	--	--	--	--
29...	5.8	495	523	.67	71.0	.01	.050	200	48	--
JUN										
04...	19	638	603	.87	109	.02	.160	310	20	3.4
JUL										
17...	34	670	544	.91	11.6	.03	.870	420	23	.40
AUG										
12...	26	639	602	.87	27.6	.00	.170	310	95	4.1
SEP										
09...	16	300	287	.41	28.3	.38	.010	180	87	8.2

06470500 JAMES RIVER AT LA MOURE, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	480	500	650	930	1170	1300	380	750	960	1080	1000	930
2	480	490	660	960	1170	1300	400	760	980	1100	1010	950
3	480	490	660	1010	1180	1240	400	800	990	1090	1000	920
4	500	500	680	1050	1200	1200	440	820	990	1100	990	840
5	500	500	700	1050	1200	1150	440	840	990	1100	980	620
6	490	490	700	1080	1220	1150	460	840	980	1110	980	580
7	500	490	710	1110	1240	1150	480	850	980	1110	1010	400
8	500	490	720	1110	1240	1000	500	875	960	1100	1000	460
9	500	500	740	1100	1220	1050	500	875	960	1100	990	470
10	490	500	750	1130	1220	1050	530	880	950	1070	990	450
11	500	500	760	1160	1200	1000	540	870	980	1040	990	460
12	490	500	780	1170	1200	1000	550	870	1000	1060	990	490
13	490	490	780	1200	1200	980	580	880	1010	1050	1000	555
14	490	490	790	1200	1220	950	600	890	1000	1040	990	560
15	480	490	800	1200	1220	800	610	890	1010	1040	980	600
16	480	500	800	1200	1200	800	640	900	1020	1030	920	690
17	480	500	790	1200	1180	780	650	900	1000	1030	920	780
18	490	520	790	1150	1180	760	680	950	1000	1020	920	750
19	480	520	780	1100	1140	720	700	980	990	1020	920	720
20	480	540	750	1100	1140	700	700	980	990	1000	910	710
21	500	550	750	1130	1150	650	680	1000	980	1000	910	665
22	510	556	780	1100	1150	580	680	1020	990	1000	900	625
23	500	580	825	1120	1130	480	700	1040	1000	1000	900	610
24	490	575	825	1120	1150	480	700	1050	1020	1000	910	620
25	490	590	860	1100	1160	450	710	1050	1020	990	910	640
26	500	600	880	1130	1160	450	700	1060	1030	1000	900	660
27	490	600	900	1130	1170	420	700	1040	1040	990	890	660
28	480	620	900	1140	1170	400	700	1020	1050	990	890	650
29	480	650	900	1140	1170	400	720	1000	1050	1000	910	650
30	480	650	910	1160	---	390	740	1000	1070	1010	920	660
31	480	---	910	1180	---	385	---	980	---	1000	930	---
MEAN	490	532	782	1120	1180	812	594	925	1000	1040	950	646

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	4.0	1.0	1.0	.5	1.0	1.5	15.0	20.0	24.0	25.0	19.0
2	13.0	3.0	1.0	.5	1.0	.5	1.5	15.0	20.0	24.0	25.0	18.5
3	12.0	2.0	1.0	.5	1.0	1.0	1.5	15.0	20.0	24.0	24.0	18.5
4	12.0	2.0	1.0	.5	1.0	1.0	1.5	14.0	21.0	25.0	24.0	19.0
5	11.0	2.0	1.0	.5	1.0	1.0	1.5	14.0	22.0	25.0	22.0	20.0
6	12.0	2.0	1.0	.5	1.0	1.0	1.5	14.0	21.0	25.0	22.0	22.0
7	11.0	1.5	1.0	.5	1.0	1.0	1.5	13.0	21.0	24.0	23.0	23.0
8	10.0	1.5	1.0	.5	1.0	1.0	1.0	13.0	21.0	24.0	23.0	23.5
9	10.0	1.5	1.0	.5	1.0	1.0	1.5	13.0	21.5	23.0	22.0	23.0
10	10.0	1.0	1.0	.5	1.0	.5	1.5	13.0	22.0	29.0	22.0	23.5
11	9.0	1.0	1.0	.5	1.0	.5	2.0	12.0	24.0	29.0	22.0	22.0
12	8.0	1.0	1.0	1.0	.5	1.0	2.0	13.0	27.0	31.0	21.0	18.0
13	8.0	1.0	.5	2.0	.5	1.0	2.0	14.0	27.0	30.0	22.0	16.0
14	7.0	1.0	.5	1.5	1.0	1.0	3.0	14.0	25.0	29.0	20.0	15.0
15	8.0	1.0	.5	1.0	1.0	1.0	3.0	14.0	25.0	28.0	20.0	14.0
16	8.0	1.0	.5	1.0	1.0	1.0	3.0	16.0	24.0	26.0	18.0	13.0
17	9.0	1.5	1.0	1.0	1.0	1.0	4.0	16.0	23.0	26.0	18.0	12.0
18	10.0	1.0	1.0	1.0	1.0	1.0	5.0	18.0	23.0	25.0	20.0	12.5
19	9.0	1.0	1.0	1.0	1.0	1.0	5.0	18.0	22.0	23.0	22.0	12.0
20	9.0	1.0	1.5	1.0	1.0	1.0	5.5	19.0	21.5	23.0	22.0	13.0
21	8.0	1.0	1.5	1.0	1.0	1.0	6.0	19.0	22.0	23.0	24.0	13.0
22	8.0	1.0	1.0	.5	1.0	1.0	6.0	21.0	23.0	23.0	25.0	14.0
23	8.0	1.0	1.0	.5	1.0	1.5	8.0	21.0	24.0	24.0	25.0	14.0
24	7.5	1.0	1.5	1.0	1.0	1.5	12.0	21.0	26.0	24.0	24.0	14.5
25	7.0	1.0	1.5	.5	.5	1.5	12.0	21.0	25.0	24.0	24.0	15.0
26	7.5	1.0	2.0	.5	1.0	1.5	13.0	22.0	22.5	24.5	22.0	15.0
27	7.0	1.0	2.0	.5	1.0	1.5	15.0	22.0	22.0	24.0	22.0	14.0
28	7.5	1.0	2.5	.5	1.0	1.5	15.0	21.0	23.0	24.0	21.0	11.0
29	7.0	1.0	2.0	.5	1.0	1.5	15.0	20.0	23.0	25.0	20.0	11.0
30	6.0	1.0	1.5	.5	---	1.5	15.0	20.5	23.0	25.0	20.0	10.0
31	4.0	---	1.0	.5	---	1.5	---	20.0	---	25.0	19.0	---
MEAN	9.0	1.5	1.0	.5	1.0	1.0	5.5	17.0	23.0	25.0	22.0	16.5

06470800 BEAR CREEK NEAR OAKES, ND

LOCATION.--Lat 46°13'31", long 98°04'17", in NE¼NE¼ sec.28, T.132 N., R.59 W., Dickey County, Hydrologic Unit 10160003, on right bank 80 ft downstream from bridge on ND Highway 13, 6 mi (10 km) north, and 1 mi (2 km) east of Oakes.

DRAINAGE AREA.--About 437 mi² (1,132 km²) contributing.

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,291.30 ft (393.588 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Record fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,170 ft³/s (33.1 m³/s) Apr. 15, 1979, gage height, 11.47 ft (3.496 m); no flow for long periods each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1, 1975, reached a stage of 15.00 ft (4.572 m) present datum, from floodmark, discharge, 4,590 ft³/s (130 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft³/s (1.42 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 19	--	50	1.42	Backwater from ice		Mar. 25	--	*65	1.84	Backwater from ice	
Mar. 22	2045	60	1.70	a*6.72	2.048						

No flow for many days.

a - Backwater from ice.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.84	.00	.00	.00	.00	31	2.8	.16	.16	.00	.00
2	.00	.36	.00	.00	.00	.00	30	2.6	.16	.10	.00	.00
3	.00	.17	.00	.00	.00	.00	30	2.6	.20	.02	.00	.00
4	.00	.28	.00	.00	.00	.00	30	2.6	.38	.02	.00	.00
5	.00	.10	.00	.00	.00	.00	27	1.4	.80	.00	.00	.00
6	.00	.14	.00	.00	.00	.00	28	1.7	1.2	.00	.00	.00
7	.00	.12	.00	.00	.00	.00	26	1.9	9.0	.00	.00	.00
8	.00	.07	.00	.00	.00	.00	23	1.9	15	.00	.00	.00
9	.00	.05	.00	.00	.00	.00	27	1.7	13	.00	.00	.00
10	.00	.04	.00	.00	.00	.00	25	1.7	9.0	.00	.00	.00
11	.00	.03	.00	.00	.00	.00	22	1.7	6.1	.00	.00	.00
12	.00	.02	.00	.00	.00	.00	21	1.7	4.6	.00	.00	.00
13	.00	.02	.00	.00	.00	2.0	20	1.7	4.8	.00	.00	.00
14	.00	.02	.00	.00	.00	2.0	19	1.4	5.3	.00	.00	.00
15	.00	.04	.00	.00	.00	3.0	18	1.3	5.3	.00	.00	.00
16	.00	.10	.00	.00	.00	5.0	16	1.2	5.3	.00	.00	.00
17	.00	.24	.00	.00	.00	10	15	1.1	4.8	.00	.00	.00
18	.00	.45	.00	.00	.00	20	13	1.0	4.3	.00	.00	.00
19	.00	.62	.00	.00	.00	35	13	.80	3.0	.00	.00	.00
20	.00	.57	.00	.00	.00	25	12	.50	1.4	.00	.00	.00
21	.00	.57	.00	.00	.00	20	11	.50	1.3	.00	.00	.00
22	.00	.45	.00	.00	.00	34	9.3	.32	1.3	.00	.00	.00
23	.00	.17	.00	.00	.00	56	7.1	.28	1.4	.00	.00	.00
24	.00	.12	.00	.00	.00	44	6.6	.28	1.6	.00	.00	.00
25	.00	.10	.00	.00	.00	53	5.8	.28	2.0	.00	.00	.00
26	.00	.11	.00	.00	.00	51	4.8	.24	1.7	.00	.00	.00
27	.00	.07	.00	.00	.00	41	4.8	.24	1.6	.00	.00	.00
28	.00	.04	.00	.00	.00	36	4.6	.24	1.7	.00	.00	.00
29	.00	.01	.00	.00	.00	34	4.0	.32	.32	.00	.00	.00
30	.00	.00	.00	.00	---	35	4.0	.38	.20	.00	.00	.00
31	.18	---	.00	.00	---	34	---	.38	---	.00	.00	---
TOTAL	.18	5.92	.00	.00	.00	540.00	508.0	36.76	106.92	.30	.00	.00
MEAN	.006	.20	.000	.000	.000	17.4	16.9	1.19	3.56	.010	.000	.000
MAX	.18	.84	.00	.00	.00	56	31	2.8	15	.16	.00	.00
MIN	.00	.00	.00	.00	.00	.00	4.0	.24	.16	.00	.00	.00
AC-FT	.4	12	.00	.00	.00	1070	1010	73	212	.6	.00	.00

CAL YR 1979 TOTAL 11710.39 MEAN 32.1 MAX 1090 MIN .00 AC-FT 23230
WTR YR 1980 TOTAL 1198.08 MEAN 3.27 MAX 56 MIN .00 AC-FT 2380

06470833 PILOT DRAIN AT OAKES, ND

LOCATION.--Lat 46°07'30", long 98°05'49", in SW¼SE¼ sec.29, T.131 N., R.59 W., Dickey County, Hydrologic Unit 10160003, and on left bank 1 mi (2 km) southwest of Oakes.

DRAINAGE AREA.--5.1 mi² (13.2 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,294.94 ft (394.698 m) National Geodetic Vertical Datum of 1929 (levels by Water and Power Resources Service).

REMARKS.--Records good. The flow is primarily due to ground water.

AVERAGE DISCHARGE.--9 years, 1.17 ft³/s (0.033 m³/s), 848 acre-ft/yr (1.05 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11 ft³/s (0.31 m³/s) Apr. 18, 1979, gage height, 2.36 ft (0.719 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.8 ft³/s (0.079 m³/s) Apr. 15, gage height, 1.84 ft (0.561 m); maximum gage height, 2.44 ft (0.733 m) Apr. 1, temporary backwater from dam on control; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.58	1.5	1.1	.73	.04	.02	2.3	1.5	.98	.58	.00	.00
2	.58	1.5	1.1	.73	.04	.02	2.2	1.5	.98	.58	.00	.00
3	.58	1.4	.98	.73	.04	.01	2.2	1.6	.98	.57	.00	.00
4	.58	1.4	.98	.73	.04	.01	2.1	1.8	.98	.51	.00	.00
5	.58	1.4	.98	.73	.04	.01	2.0	1.7	.98	.50	.00	.00
6	.58	1.3	1.2	.66	.04	.01	2.1	1.6	.98	.44	.00	.00
7	.58	1.3	1.3	.35	.04	.04	2.1	1.5	.98	.38	.00	.00
8	.58	1.3	1.2	.22	.04	.04	2.1	1.5	.98	.32	.00	.00
9	.58	1.3	1.3	.10	.04	.04	2.0	1.5	.98	.32	.00	.00
10	.57	1.3	1.3	.07	.04	.04	1.8	1.5	.98	.27	.00	.00
11	.26	1.2	1.1	.07	.06	.04	2.2	1.5	.98	.26	.00	.00
12	.17	1.2	.98	.07	.04	.07	2.6	1.5	.95	.22	.00	.00
13	.16	1.2	.98	.07	.04	.07	2.6	1.3	1.3	.17	.00	.00
14	.16	1.2	.98	.04	.04	.07	2.5	1.3	1.1	.16	.00	.00
15	.16	1.2	.98	.04	.04	.07	2.3	1.3	.96	.16	.00	.00
16	.16	1.2	.89	.04	.04	.07	2.1	1.3	.89	.16	.00	.00
17	.12	1.3	.89	.04	.04	.10	2.0	1.3	.89	.11	.00	.00
18	.11	1.3	.89	.04	.04	.97	2.0	1.3	.89	.11	.00	.00
19	.11	1.3	.89	.04	.04	1.6	2.0	1.3	.86	.10	.00	.00
20	.11	1.3	.89	.04	.04	1.2	2.0	1.3	.81	.07	.00	.00
21	.11	1.3	.89	.04	.04	1.4	1.9	1.3	.81	.07	.00	.00
22	.11	1.2	.89	.04	.04	1.0	1.8	1.3	.81	.07	.00	.00
23	.11	1.2	.89	.04	.04	1.7	1.8	1.3	.76	.07	.00	.00
24	.11	1.2	.89	.04	.04	2.0	1.7	1.3	.73	.07	.00	.00
25	.11	1.2	.81	.04	.04	2.0	1.6	1.2	.73	.05	.00	.00
26	.16	1.2	.81	.04	.04	2.0	1.6	1.1	.73	.04	.00	.00
27	1.8	1.2	.81	.04	.04	2.0	1.6	1.0	.72	.04	.00	.00
28	2.0	1.2	.81	.04	.04	2.1	1.6	.98	.62	.04	.00	.00
29	1.8	1.2	.73	.04	.04	2.4	1.6	.98	.58	.03	.00	.00
30	1.8	1.2	.73	.04	---	2.5	1.5	.98	.58	.00	.00	.00
31	1.8	---	.73	.04	---	2.5	---	.98	---	.00	.00	---
TOTAL	17.02	38.2	29.90	5.98	1.18	26.10	59.9	41.52	26.50	6.47	.00	.00
MEAN	.55	1.27	.96	.19	.041	.84	2.00	1.34	.88	.21	.000	.000
MAX	2.0	1.5	1.3	.73	.06	2.5	2.6	1.8	1.3	.58	.00	.00
MIN	.11	1.2	.73	.04	.04	.01	1.5	.98	.58	.00	.00	.00
AC-FT	34	76	59	12	2.3	52	119	82	53	13	.00	.00

CAL YR 1979 TOTAL 669.15 MEAN 1.83 MAX 9.9 MIN .06 AC-FT 1330
WTR YR 1980 TOTAL 252.77 MEAN .69 MAX 2.6 MIN .00 AC-FT 501

06470833 PILOT DRAIN AT OAKES, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1971 to current year.
WATER TEMPERATURES: October 1971 to current year.

INSTRUMENTATION.--Temperature recorder November 1976 to September 1978.

REMARKS.--Due to recorder malfunctions, continuous water temperature data does not conform to acceptable accuracy standards. Once daily observations recorded by a local observer are being published in lieu of the recorder data.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 830 micromhos Apr. 5, 10, and 12, 1973; minimum daily, 320 micromhos Mar. 16, 1972.
WATER TEMPERATURES: Maximum daily, 26.5°C Aug. 18, 1972, June 24, 1980; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT										
01...	1920	.58	670	7.5	14.5	10	--	--	300	42
NOV										
06...	1325	1.3	755	8.0	2.0	5	--	--	370	87
27...	1145	1.2	720	7.9	1.0	5	--	--	380	59
JAN										
02...	1720	.67	725	7.7	1.0	5	--	--	370	82
FEB										
05...	1000	.03	640	7.5	4.5	10	--	--	350	94
MAR										
06...	0900	.01	640	7.5	3.0	5	--	--	350	95
25...	1010	1.9	735	7.6	1.0	10	--	--	380	110
APR										
29...	1330	1.5	940	7.9	4.0	20	--	--	380	160
JUN										
03...	1030	1.0	710	7.9	16.0	10	--	--	340	72
JUL										
17...	1515	1.3	575	8.1	22.0	25	9.1	102	270	57

06470833 PILOT DRAIN AT OAKES, ND--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM+ POTAS- SIUM DIS- SOLVED (MG/L AS NA) (00933)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT										
01...	78	26	21	10	.5	27	6.0	260	83	8.3
NOV										
06...	94	32	20	10	.5	27	6.5	280	120	12
27...	99	32	21	11	.5	27	6.4	290	120	17
JAN										
02...	96	32	19	14	.4	25	5.8	290	100	15
FEB										
05...	89	32	14	8	.3	19	4.8	260	81	12
MAR										
06...	87	31	13	7	.3	18	4.9	250	82	13
25...	97	33	19	10	.4	25	5.6	270	120	15
APR										
29...	99	32	19	10	.4	25	5.8	220	210	6.5
JUN										
03...	86	31	18	10	.4	24	6.0	270	110	13
JUL										
17...	54	32	19	13	.5	25	5.8	210	90	13

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	BORON, DIS- SOLVED (UG/L AS B) (01020)
OCT									
01...	.2	27	448	408	.61	.70	.53	.010	110
NOV									
06...	.2	27	519	483	.71	1.82	.64	.010	90
27...	.2	29	490	502	.67	1.59	.56	.070	80
JAN									
02...	.2	29	455	475	.62	.82	.76	.020	80
FEB									
05...	.2	29	424	431	.58	.03	2.8	.020	80
MAR									
06...	.2	28	415	423	.56	.01	3.0	.010	70
25...	.1	26	489	479	.67	2.52	.28	.020	70
APR									
29...	.2	25	454	531	.62	1.84	.29	.010	140
JUN									
03...	.2	27	471	454	.64	1.27	.15	.040	80
JUL									
17...	.4	27	385	369	.52	1.35	.39	.070	90

06470833 PILOT DRAIN AT OAKES, ND--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	740	700	---	---	---	---	750	750	---	720		
2	725	750	---	720	---	---	740	---	710	690		
3	725	---	700	---	---	---	740	---	650	690		
4	725	---	---	---	625	---	740	---	700	---		
5	750	725	---	---	---	---	---	750	710	---		
6	---	740	---	---	---	620	---	---	---	---		
7	---	---	---	740	---	600	725	725	---	680		
8	---	740	---	---	---	---	730	720	---	680		
9	700	700	---	---	---	---	720	710	700	700		
10	700	---	750	---	---	---	725	---	700	680		
11	660	---	---	---	690	650	---	---	700	630		
12	650	---	---	---	---	---	---	750	700	---		
13	---	700	---	---	---	575	---	740	---	---		
14	---	700	---	670	---	600	750	730	---	600		
15	690	700	---	---	---	---	730	750	---	600		
16	640	675	---	---	---	---	720	750	750	620		
17	610	---	740	---	---	610	725	---	750	600		
18	610	---	---	---	---	530	720	---	750	600		
19	540	720	---	---	---	---	---	780	750	---		
20	---	720	---	---	650	600	---	760	---	---		
21	---	700	---	650	---	670	730	760	---	600		
22	---	---	---	---	---	---	730	760	---	600		
23	---	650	---	---	---	---	730	750	750	600		
24	680	---	---	---	---	700	730	---	660	650		
25	660	---	---	---	650	---	750	---	700	650		
26	680	750	---	---	650	725	---	---	730	---		
27	---	720	---	---	650	725	---	750	750	---		
28	---	720	---	670	640	725	750	750	---	---		
29	760	740	---	---	---	---	750	700	---	---		
30	750	700	---	---	---	---	750	730	720	---		
31	700	---	---	---	---	750	---	---	---	---		
MEAN	685	713	730	690	651	649	735	743	716	644		

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.0	.0	---	---	---	---	2.0	11.0	---	17.0		
2	9.0	1.0	---	1.0	---	---	2.0	---	17.0	17.0		
3	8.0	---	.0	---	---	---	3.0	---	18.0	18.0		
4	6.0	---	---	---	4.0	---	4.0	---	18.0	---		
5	8.0	2.0	---	---	---	---	---	13.0	17.0	---		
6	---	4.0	---	---	---	4.0	---	---	---	---		
7	---	---	---	.0	---	4.0	5.0	5.0	---	24.0		
8	---	.0	---	---	---	---	2.0	4.0	---	18.0		
9	6.0	.0	---	---	---	---	10.0	8.0	13.0	16.5		
10	7.0	---	.0	---	---	---	4.0	---	14.5	20.0		
11	8.0	---	---	---	1.0	3.0	---	---	15.5	22.0		
12	7.0	---	---	---	---	---	---	7.0	18.0	---		
13	---	2.0	---	---	---	4.0	---	7.0	---	---		
14	---	2.0	---	3.0	---	4.0	10.0	7.0	---	23.0		
15	6.0	4.0	---	---	---	---	13.0	7.0	---	19.5		
16	8.0	3.0	---	---	---	---	6.0	10.0	14.0	17.0		
17	6.0	---	2.0	---	---	4.0	7.0	---	15.0	18.0		
18	8.0	---	---	---	---	4.0	7.0	---	16.0	19.0		
19	6.0	4.0	---	---	---	---	---	11.0	11.5	---		
20	---	2.0	---	---	5.0	2.0	---	11.0	---	---		
21	---	2.0	---	4.0	---	2.0	12.0	13.0	---	16.5		
22	---	---	---	---	---	---	12.0	14.0	---	15.5		
23	---	.0	---	---	---	---	9.0	14.0	19.0	18.0		
24	5.0	---	---	---	---	1.0	6.0	---	26.5	19.0		
25	5.0	---	---	---	4.0	---	6.0	---	21.5	17.5		
26	6.0	1.0	---	---	3.0	.0	---	---	17.5	---		
27	---	.0	---	---	3.0	.0	---	17.0	18.0	---		
28	---	.0	---	2.0	3.0	.0	8.0	17.0	---	---		
29	5.0	.0	---	---	---	---	10.0	16.0	---	---		
30	7.0	.0	---	---	---	---	10.0	15.0	17.0	---		
31	4.0	---	---	---	---	1.0	---	---	---	---		
MEAN	7.0	1.5	.5	2.0	3.5	2.5	7.0	11.0	17.0	18.5		

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'10", long 98°10'26", in SE¼SE¼ sec.34, T.129 N., R. 60 W., Dickey County, Hydrologic Unit 10160003, at bridge on North Dakota-South Dakota State line road 6.5 mi (9.8 km) south, and 1 mi (1.6 km) west from Ludden, ND.

DRAINAGE AREA.--6,650 mi² (17,200 km²), approximately, of which about 2,800 mi² (7,300 km²) is probably noncontributing.

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,000 micromhos Mar. 15, 16, 1979; minimum daily, 242 micromhos Apr. 25, 1975.
WATER TEMPERATURES: Maximum daily, 28.5°C June 12, 1976, July 5, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,760 micromhos Mar. 6; minimum daily, 380 micromhos Apr. 8.
WATER TEMPERATURES: Maximum daily, 28.0°C July 9; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT									
01...	1625	535	8.5	15.0	35	9.8	101	190	15
NOV									
05...	1545	520	8.5	2.0	20	14.5	107	190	11
26...	1745	550	8.5	2.0	15	14.6	111	230	25
JAN									
02...	1400	860	8.4	1.0	25	16.3	114	350	41
FEB									
04...	1750	1220	7.5	2.0	20	30.4	224	520	98
MAR									
03...	1600	1700	7.8	.5	5	26.7	189	760	120
26...	1310	670	7.5	.0	40	4.3	30	230	40
APR									
28...	1615	630	8.6	15.0	30	11.4	114	230	20
JUN									
02...	1750	640	8.5	20.5	15	8.2	92	260	10
JUL									
17...	1620	935	8.6	25.0	140	10.0	119	290	11
SEP									
08...	1725	1080	9.0	24.0	25	9.4	109	330	41

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT									
01...	45	20	37	39	1.2	47	10	180	99
NOV									
05...	45	19	34	27	1.1	45	11	180	90
26...	54	22	39	26	1.1	50	11	200	110
JAN									
02...	81	36	64	39	1.5	77	13	310	150
FEB									
04...	110	59	110	31	2.1	130	16	420	240
MAR									
03...	180	76	170	32	2.7	190	16	640	380
26...	56	22	55	33	1.6	66	11	190	120
APR									
28...	54	23	49	30	1.4	60	11	210	110
JUN									
02...	53	31	64	33	1.7	78	14	250	130
JUL									
17...	59	35	100	41	2.6	120	17	280	180
SEP									
08...	65	41	120	42	2.9	140	19	290	190

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	BORON, DIS-SOLVED (UG/L AS B) (01020)
OCT									
01...	12	.2	.8	345	332	.47	.01	.010	140
NOV									
05...	11	.1	1.2	331	320	.45	.01	.010	120
26...	12	.2	5.3	355	375	.48	.17	.090	120
JAN									
02...	26	.2	6.6	586	564	.80	.05	.020	170
FEB									
04...	49	.2	2.8	856	839	1.16	.00	.020	310
MAR									
03...	79	.3	1.8	1190	1290	1.62	.02	.010	460
26...	26	.1	8.5	429	416	.58	.62	.210	220
APR									
28...	21	.2	.8	383	395	.52	.02	.040	140
JUN									
02...	30	.2	5.6	502	478	.68	.03	.170	240
JUL									
17...	53	.5	30	656	644	.89	.11	.600	350
SEP									
08...	67	.3	13	674	690	.92	.01	.200	360

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	560	530	580	850	1100	1700	500	640	790	890	---	1090
2	560	530	560	860	1180	1710	480	650	800	900	---	1130
3	560	530	570	890	1190	---	440	660	790	920	---	1130
4	570	540	590	880	1200	1750	410	660	800	920	---	1130
5	560	540	600	910	1200	1750	400	670	800	930	---	1130
6	560	560	600	930	1210	1760	400	690	800	930	---	1120
7	560	570	610	950	1160	1760	390	700	790	940	---	1110
8	560	560	620	990	1170	1740	380	710	800	920	---	1110
9	560	540	650	1000	1180	1710	390	730	810	900	---	1120
10	550	560	650	1050	1200	1680	410	730	780	900	---	1130
11	550	560	660	1090	1220	1600	410	730	760	910	---	1140
12	550	570	690	1080	1250	1650	430	730	730	920	---	1110
13	560	570	690	1080	1300	1630	420	750	750	930	---	1120
14	560	580	690	1080	1500	1610	430	750	760	940	---	1130
15	550	590	690	1050	1550	1530	430	750	780	940	---	1130
16	560	600	690	1040	1600	1550	430	750	800	940	---	1150
17	560	590	700	1050	1650	1500	440	750	820	950	1190	1150
18	540	590	740	1060	1690	1440	450	760	830	950	1190	1150
19	550	580	750	1060	1700	1440	460	760	840	960	1180	1160
20	540	580	760	1070	1680	1440	490	760	850	950	1170	1160
21	540	570	830	1000	1640	1280	520	760	850	960	1140	1150
22	540	580	840	1020	1640	1030	550	760	860	940	1140	1140
23	550	580	820	1020	1650	990	580	770	850	960	1120	1120
24	550	550	830	1030	1670	800	610	740	840	---	1120	1110
25	540	550	830	1040	1680	730	610	740	850	---	1110	1040
26	540	560	850	1040	1680	650	620	760	850	---	1050	1040
27	530	550	850	1060	1680	690	620	790	860	---	1040	1030
28	520	550	840	1080	1690	650	630	790	870	---	1030	1010
29	520	570	850	1090	1690	610	630	780	880	---	1040	960
30	520	570	850	1080	---	550	640	790	890	---	1060	940
31	515	---	840	1040	---	530	---	790	---	---	1080	---
MEAN	548	563	720	1020	1450	1320	487	735	816	930	1110	1100

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.5	2.5	.5	2.0	.5	.0	2.0	22.0	19.0	22.5	---	16.0
2	15.0	2.0	2.0	1.0	1.0	1.0	3.0	19.5	20.0	23.5	---	16.5
3	12.5	2.0	3.5	1.0	.5	---	2.0	19.0	20.0	22.0	---	20.5
4	10.5	3.0	3.5	1.0	.5	.5	2.5	24.0	20.5	21.5	---	16.5
5	11.0	3.5	1.5	1.0	1.5	.5	3.0	19.0	20.5	26.0	---	17.0
6	10.0	4.0	3.0	1.0	1.0	.5	2.5	13.5	20.5	25.0	---	20.0
7	11.0	3.5	3.0	.0	.5	1.0	2.0	11.0	18.0	25.5	---	22.5
8	9.5	2.0	2.5	.0	1.0	1.0	1.5	9.0	19.0	26.0	---	24.0
9	9.0	2.0	3.5	.0	.5	1.0	2.0	13.0	18.0	28.0	---	16.5
10	9.0	3.0	4.0	.0	.0	1.0	3.5	12.5	20.5	26.0	---	16.5
11	10.0	3.0	1.0	.0	.0	.5	3.0	11.5	21.0	27.0	---	18.0
12	8.0	3.5	1.5	.0	.5	1.0	4.5	13.5	22.0	24.5	---	17.0
13	6.0	4.0	2.5	1.0	.5	1.0	4.0	14.0	23.5	25.5	---	16.0
14	6.5	4.0	3.0	1.0	1.0	1.5	6.5	13.0	22.5	27.5	---	15.5
15	10.0	4.0	2.0	2.0	.5	1.5	6.5	15.0	21.0	24.0	---	15.0
16	8.5	4.0	.0	1.0	.5	.5	8.5	15.5	22.0	23.0	---	13.5
17	9.0	3.0	.5	1.0	.5	1.5	12.0	15.0	22.0	24.0	19.5	13.0
18	9.5	4.0	3.0	2.5	.5	1.5	15.0	16.5	21.5	23.5	20.0	13.0
19	8.5	5.5	4.0	2.0	.5	3.5	12.5	18.5	20.0	23.0	25.0	12.5
20	10.5	3.0	4.5	1.5	.5	1.5	15.5	18.0	20.0	20.5	23.0	13.0
21	7.0	2.0	4.5	1.0	.5	1.5	16.5	18.5	21.5	20.5	19.5	14.0
22	6.5	1.5	5.0	1.5	.5	.5	14.0	19.5	22.0	20.5	20.0	13.5
23	5.5	1.5	3.0	1.5	1.0	.5	13.5	19.5	24.0	23.0	21.5	12.0
24	5.5	3.0	2.5	1.0	1.0	.5	13.5	20.0	23.0	---	22.0	12.5
25	6.0	3.0	2.5	.5	.5	.5	13.5	20.5	25.5	---	23.5	12.0
26	5.5	2.0	4.0	.0	1.0	1.0	14.0	21.0	25.0	---	22.0	11.5
27	7.5	2.5	4.0	.5	.0	1.0	14.0	21.5	24.0	---	22.0	11.5
28	8.5	1.0	3.5	.5	.0	.5	16.0	22.0	24.5	---	22.5	12.0
29	8.5	.5	3.0	.5	.0	1.0	16.5	21.5	22.5	---	21.0	15.0
30	7.0	1.0	3.0	.5	---	1.5	17.0	19.0	22.0	---	20.5	15.5
31	4.5	---	3.0	.0	---	2.0	---	19.5	---	---	19.0	---
MEAN	9.0	3.0	3.0	1.0	.5	1.0	8.5	17.5	21.5	24.0	21.5	15.5

06471200 MAPLE RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'20", long 98°27'08", in SW¼SE¼ sec.33, T.129 N., R.62 W., Dickey County, ND, Hydrologic Unit 10160004, on left bank 0.4 mi (0.6 km) upstream from State line, 7.8 mi (12.6 km) northeast of Frederick, SD, and 15.7 mi (25.3 km) upstream from mouth.

DRAINAGE AREA.--750 mi² (1,940 km²), approximately, of which about 270 mi² (699 km²) is probably noncontributing.

PERIOD OF RECORD.--June 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,365 ft (416 m), from topographic map. Prior to June 14, 1962, nonrecording gage at site 0.4 mi (0.6 km) downstream at datum 0.94 ft (0.287 m) lower.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--24 years, 20.0 ft³/s (0.566 m³/s), 14,490 acre-ft/yr (17.9 hm³/yr); median of yearly mean discharges, 10 ft³/s (0.28 m³/s), 7,240 acre-ft/yr (8.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft³/s (168 m³/s) Apr. 11, 1969, gage height, 15.22 ft (4.639 m); maximum gage height, 16.05 ft (4.892 m) Apr. 11, 1969, backwater from ice; no flow for long periods each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31 ft³/s (0.88 m³/s) Apr. 1, gage height, 4.27 ft (1.301 m), no peak above base of 50 ft³/s (1.42 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	30	2.6	2.2	.67	.00	.00
2	.00	.00	.00	.00	.00	.00	28	2.2	20	.25	.00	.00
3	.00	.00	.00	.00	.00	.00	26	2.2	18	.16	.00	.00
4	.00	.00	.00	.00	.00	.00	24	2.0	14	.22	.00	.00
5	.00	.00	.00	.00	.00	.00	21	1.8	11	.22	.00	.00
6	.00	.00	.00	.00	.00	.00	20	1.4	8.5	.07	.00	.00
7	.00	.00	.00	.00	.00	.00	18	1.4	7.0	.07	.00	.00
8	.00	.00	.00	.00	.00	.00	16	1.2	5.1	.02	.00	.00
9	.00	.00	.00	.00	.00	.00	15	.99	3.9	.01	.00	.00
10	.00	.00	.00	.00	.00	.00	15	.99	2.6	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	14	.47	1.8	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	13	.37	1.6	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	11	.29	1.7	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	10	.19	1.3	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	9.6	.13	1.1	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	8.2	.11	.67	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	7.5	.07	.47	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	6.1	.06	.47	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	6.4	.02	.29	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	5.9	.00	.25	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	6.6	.00	.47	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	6.7	.00	.82	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	6.1	.00	1.0	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	5.9	.00	1.7	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	5.3	.00	2.6	.00	.00	.00
26	.00	.00	.00	.00	.00	.40	3.9	.00	2.7	.00	.00	.00
27	.00	.00	.00	.00	.00	3.0	3.5	.00	2.2	.00	.00	.00
28	.00	.00	.00	.00	.00	25	3.1	.00	1.7	.00	.00	.00
29	.00	.00	.00	.00	.00	26	2.8	.00	1.3	.00	.00	.00
30	.00	.00	.00	.00	---	29	2.6	.00	.76	.00	.00	.00
31	.00	---	.00	.00	---	30	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	113.40	351.2	18.49	117.10	1.69	.00	.00
MEAN	.000	.000	.000	.000	.000	3.66	11.7	.60	3.91	.055	.000	.000
MAX	.00	.00	.00	.00	.00	30	30	2.6	20	.67	.00	.00
MIN	.00	.00	.00	.00	.00	.00	2.6	.00	.25	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	225	697	37	232	3.4	.00	.00

CAL YR 1979 TOTAL 17260.61 MEAN 47.3 MAX 2200 MIN .00 AC-FT 34200
WTR YR 1980 TOTAL 602.02 MEAN 1.64 MAX 30 MIN .00 AC-FT 1190

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft³/s)
		Red River of the North basin				
North Branch Turtle River	Turtle River	Lat 47°57'41", long 97°35'25", in [illegible] sec.29, T.152 N., R.54 W., Grand Forks County, 4 miles northeast of Larimore.	—	—	5-25-80 6-1-80 6-5-80 6-6-80 6-7-80 6-10-80 6-13-80 [illegible] [illegible]	5.6 74 81 [illegible] 63 26 19 [illegible] [illegible]
South Branch Turtle River	Turtle River	Lat 47°55'[illegible]", long 97°[illegible]", in [illegible] sec.1, T.151 N., R.55 W., Grand Forks County, 1.5 miles north of Larimore.	—	—	[illegible]	[illegible]
Turtle River	Red River of the North	Lat 47°[illegible]", long 97°[illegible]", in [illegible] sec.[illegible], T.152 N., R.54 W., Grand Forks County, 7 miles northeast of Larimore.	—	—	5-25-80 6-1-80 [illegible]	[illegible]
Turtle River	Red River of the North	[illegible], Grand Forks County, [illegible] of Arvilla.	—	—	[illegible]	[illegible]
Turtle River	Red River of the North	[illegible], Grand Forks County, [illegible] of Arvilla.	—	—	[illegible]	[illegible]
Turtle River	Red River of the North	[illegible], Grand Forks County, [illegible]	—	—	[illegible]	[illegible]
Turtle River	Red River of the North	[illegible], Grand Forks County, [illegible]	—	—	[illegible]	[illegible]
Turtle River	Red River of the North	[illegible], Grand Forks County, [illegible]	—	—	[illegible]	[illegible]
[illegible]	Turtle River	[illegible], Grand Forks County, [illegible]	—	—	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	—	—	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	—	—	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	—	—	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft³/s)
		Red River of the North basin				
Freshwater Coulee	Saltwater Coulee	Lat 47°56'00", long 97°14'00", in [illegible] sec.31, T.152 N., R.51 W., Grand Forks County, at bridge on U.S. Highway 2, 4 miles east of Emerado.	31.0	1955-73	6-11-80	*.09
Saltwater Coulee	Turtle River	Lat 48°00'19", long 97°12'26", in [illegible] sec.8, T.152 N., R.51 W., Grand Forks County, 5 miles southeast of Manvel.	--	--	6-11-80	*0
Turtle River	Red River of the North	Lat 48°04'47", long 97°11'07", in [illegible] sec.10, T.153 N., R.51 W., Grand Forks County, 0.5 mile east of Manvel.	615	1945-76	3-31-80 4-2-80 4-3-80 4-8-80 4-11-80 4-18-80 4-30-80 6-27-80	151 481 270 112 61.5 58.6 [illegible] 16.7
Middle Branch Park River	Red River of the North	Lat 48°30'12", long 97°45'19", in [illegible] sec.17, T.156 N., R.55 W., Walsh County, 4 miles east of Edinburg.	65.4	1970-75	[illegible]	[illegible]
Middle Branch Park River	Red River of the North	[illegible] Walsh County, [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
North Branch Park River	Red River of the North	[illegible] Pembina County, [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
North Branch Park River	Red River of the North	[illegible] Pembina County, [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
North Branch Park River	Red River of the North	[illegible] Walsh County, [illegible]	--	--	[illegible]	[illegible]
North Branch Park River	Red River of the North	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Red River of the North	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Red River of the North	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Red River of the North	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]

[illegible]

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft³/s)
		Red River of the North basin				
Willow Creek	Souris River	lat 48°40'29", long 100°28'08", in NE¼NE¼NW¼ sec.19, T.160 N., R.73 W., Rolette County, south side of county road at downstream side of bridge 0.5 mile east of Overly.	—	—	6-15-80	0
Wolf Creek	Souris River	lat 48°48'16", long 99°45'47", in NW¼SW¼NW¼ sec.7, T.161 N., R.71 W., Rolette County, south side of county road at downstream side of culvert 2 miles east of junction of U.S. Highway No. 5 and [illegible].	—	—	6-5-80 6-5-80 6-13-80 6-14-80 6-15-80	1.26 .65 .60 0 0
Wolf Creek	Souris River	[illegible]	—	—	[illegible]	[illegible]
Wolf Creek	Souris River	[illegible]	—	—	[illegible]	[illegible]
Wolf Creek	Souris River	[illegible]	—	—	[illegible]	[illegible]
Wolf Creek	Souris River	[illegible]	—	—	[illegible]	[illegible]
Wolf Creek	Souris River	[illegible]	—	—	[illegible]	[illegible]
Wolf Creek	Souris River	[illegible]	—	—	[illegible]	[illegible]
Wolf Creek	Souris River	[illegible]	—	—	[illegible]	[illegible]
Wolf Creek	Souris River	[illegible]	—	—	[illegible]	[illegible]
Wolf Creek	Souris River	[illegible]	—	—	[illegible]	[illegible]
		[illegible]				
[illegible]	[illegible]	[illegible]	—	—	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	—	—	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	—	—	[illegible]	[illegible]

[illegible]

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		Little Missouri River basin				
Little Beaver Creek Tributary	Little Beaver Creek	Lat 46°57'22", long 103°58'01", in NE¼NE¼SE¼ sec.7, T.140 N., R.105 W., Golden Valley County, 3 miles northeast of Beach.	--	--	11-8-78 11-20-79	*0 *0
Little Beaver Creek	Beaver Creek	Lat 46°58'43", long 103°59'07", in NW¼NW¼NE¼ sec.6, T.140 N., R.105 W., Golden Valley County, 4 miles northeast of Beach.	--	--	11-20-79	*0
Little Beaver Creek	Beaver Creek	Lat 47°00'08", long 103°59'01", in NW¼NW¼SE¼ sec.30, T.141 N., R.105 W., Golden Valley County, 6 miles north of Beach.	--	--	11-8-78 11-20-79	*.15 *.28
Little Beaver Creek	Beaver Creek	Lat 47°02'45", long 104°03'30", in NE¼SE¼SW¼ sec.24, T.15 N., R.60 E., Wibaux County, 9 miles northwest of Beach.	--	--	11-7-78	*.08
		Heart River basin				
Green River Tributary	Green River	Lat 46°59'27", long 103°03'12", in NE¼SE¼SE¼ sec.35, T.141 N., R.98 W., Billings County, 10 miles north of South Heart.	--	--	11-7-78 11-26-79	*0 *0
Green River Tributary	Green River	Lat 46°55'59", long 103°01'08", in [illegible] sec.30, T.141 N., R.97 W., Stark County, 10 miles north of South Heart.	--	--	11-26-79	*.09
North Creek	Heart River	Lat 46°55'24", long 103°06'01", in [illegible] sec.15, T.140 N., R.98 W., Stark County, 5 miles northwest of Belfield.	--	--	11-7-78 11-26-79	*0 *0
North Creek	Heart River	Lat 46°54'13", long 103°06'58", in [illegible] sec.20, T.140 N., R.98 W., Stark County, 5 miles east of Belfield.	--	--	11-7-78 11-26-79	*0 *0
North Creek	Heart River	Lat 46°54'01", long 103°06'04", in [illegible] sec.20, T.140 N., R.98 W., Stark County, 6 miles east of Belfield.	--	--	11-7-78 11-26-79	*0 *0
		Grand River basin				
[illegible]	Grand River	[illegible] Bowman County, at bridge on county highway, [illegible]	--	[illegible]	[illegible]	[illegible]
Spring Creek	North Fork Grand River	[illegible] Bowman County, at bridge on county highway, [illegible]	--	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]
		[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

HEART RIVER BASIN

06348500 - E. A. PATTERSON LAKE NEAR DICKINSON, N. DAK. (LAT 46 52 11 LONG 102 49 37)

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
FEB., 1980										
19...	1030	.0	23	2409.90	13.80	3.0	20	225	15	696
19...	1032	1.0	--	2409.90	--	--	--	--	--	--
19...	1034	3.3	--	2409.90	--	--	--	--	--	--
19...	1036	6.0	--	2409.90	--	--	--	--	--	--
19...	1038	10.0	--	2409.90	--	--	--	--	--	--
19...	1040	13.0	--	2409.90	--	--	--	--	--	--
MAY										
08...	0900	.0	21	2409.90	14.37	17.0	80	315	9.0	--
08...	0902	1.0	--	2409.90	--	--	--	--	--	--
08...	0904	3.0	--	2409.90	--	--	--	--	--	--
08...	0906	6.0	--	2409.90	--	--	--	--	--	--
08...	0908	10.0	--	2409.90	--	--	--	--	--	--
08...	0910	13.0	--	2409.90	--	--	--	--	--	--
SEP										
23...	1000	.0	23	2409.90	11.88	18.0	75	325	13	696
23...	1007	1.0	--	2409.90	--	--	--	--	--	--
23...	1009	3.0	--	2409.90	--	--	--	--	--	--
23...	1050	6.0	--	2409.90	--	--	--	--	--	--
23...	1052	9.0	--	2409.90	--	--	--	--	--	--
23...	1053	13.0	--	2409.90	--	--	--	--	--	--
23...	1055	15.0	--	2409.90	--	--	--	--	--	--
23...	1057	18.0	--	2409.90	--	--	--	--	--	--
23...	1059	21.0	--	2409.90	--	--	--	--	--	--

[illegible]

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

HEART RIVER BASIN

[illegible] - E A PATTERSON LAKE NEAR DICKINSON, N. DAK. (LAT [illegible] LONG [illegible])

DATE	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLOR (PLAT-INUM COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
FEB., 1980									
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--
[illegible]...	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--
MAY									
[illegible]...	--	--	[illegible]	--	[illegible]	--	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	--	--	--	--
[illegible]...	[illegible]	[illegible]	[illegible]	--	[illegible]	--	[illegible]	[illegible]	[illegible]
[illegible]...	--	--	[illegible]	--	[illegible]	--	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	--	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	--	--	--	--
[illegible]									
[illegible]...	--	--	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--
[illegible]...	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--
[illegible]...	--	--	[illegible]	--	[illegible]	[illegible]	--	--	--

[illegible]

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

HEART RIVER BASIN

[illegible] - PATTERSON LAKE NEAR DICKINSON, N. DAK. [illegible]

[illegible]

[illegible]

[illegible]

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

HEART RIVER BASIN

06345500 - E A PATTERSON LAKE NEAR DICKINSON, N. DAK. (LAT 46 52 11 LONG 102 49 37)

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	BORON, DIS-SOLVED (UG/L AS B) (01020)
FEB , 1980									
06...	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--
06...	13	.4	7.0	1430	1230	1.94	.29	.100	470
06...	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--
MAY									
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	13	.4	6.2	1150	1070	1.56	.07	.070	380
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
SEP									
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	16	.5	6.7	1390	1160	1.89	.02	.170	420
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--

[illegible]

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

JAMES RIVER BASIN

[illegible] - JAMESTOWN RESERVOIR [illegible] JAMESTOWN, ND (LAT [illegible] LONG [illegible])

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
OCT., 1979										
[illegible]	[illegible]	--	--	[illegible]	[illegible]	--	--	--	--	--
[illegible]	[illegible]	.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]										
[illegible]	[illegible]	.0	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]										
[illegible]	[illegible]	.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]										
[illegible]	[illegible]	.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	--	[illegible]	--	--	--	--	--	--

[illegible]

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

JAMES RIVER BASIN

06469000 - JAMESTOWN RESERVOIR NR JAMESTOWN, ND (LAT 46 56 03 LONG 098 42 38)

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT , 1979									
03...	30	20	31	43	1.0	41	10	160	63
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	35	19	33	41	1.0	45	12	160	63
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
JAN , 1980									
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	63	21	33	37	1.0	44	11	200	74
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
[illegible]									
[illegible]	--	--	--	--	--	--	--	--	--
[illegible]	--	--	--	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	--	--	--	--	--	--	--	--	--
[illegible]	--	--	--	--	--	--	--	--	--
[illegible]	--	--	--	--	--	--	--	--	--
[illegible]	--	--	--	--	--	--	--	--	--
[illegible]									
[illegible]	--	--	--	--	--	--	--	--	--
[illegible]	--	--	--	--	--	--	--	--	--
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	--	--	--	--	--	--	--	--	--
[illegible]	--	--	--	--	--	--	--	--	--
[illegible]	--	--	--	--	--	--	--	--	--
[illegible]	--	--	--	--	--	--	--	--	--

[illegible]

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ELEV OF LAND SURFACE DATUM (FT NGVD) (72000)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
PART 5. HUDSON BAY BASIN												
RED RIVER OF THE NORTH BASIN												
05056220 - SWEETWATER LAKE AT SWEETWATER, ND (LAT 48 12 37 LONG 098 52 15)												
NOV., 1979												
08...	1505	[illegible]	975	8.0	1.0	40	310	37	52	43	88	36
MAY, 1980												
13...	1500	[illegible]	960	8.9	23.0	30	320	56	54	44	81	34
05056250 - LAKE ALICE NR CHURCHS FERRY, ND (LAT 48 21 07 LONG 099 05 42)												
NOV., 1979												
20...	1335	[illegible]	1150	7.9	5.0	40	450	98	92	53	75	38
MAY, 1980												
[illegible]	[illegible]	[illegible]	1590	8.7	19.5	40	680	460	150	75	97	43
05056260 - LAKE IRVINE NR CHURCHS FERRY, ND (LAT 48 16 57 LONG 099 10 29)												
NOV., 1979												
[illegible]	1250	[illegible]	990	8.0	4.0	150	390	57	84	45	69	37
MAY, 1980												
[illegible]	[illegible]	[illegible]	770	8.6	21.5	60	300	70	63	35	60	43

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05056220 - SWEETWATER LAKE AT SWEETWATER, ND (LAT 48 12 57 LONG 098 52 15)											
NOV , 1979 28...	0	60	20	.0	<10	2	0	260	<1.0	5	.00
MAY , 1980 01...	1	60	5	.1	<10	0	0	260	.0	<3	.00
05056250 - LAKE ALICE NR CHURCHS FERRY, ND (LAT 48 21 57 LONG 099 05 42)											
NOV , 1979 28...	0	70	30	.0	<10	5	1	350	<1.0	30	.00
MAY , 1980 01...	0	90	50	.1	<10	4	0	500	1.0	<3	.00
05056260 - LAKE IRVINE NR CHURCHS FERRY, ND (LAT 48 16 57 LONG 099 10 25)											
NOV , 1979 28...	0	60	20	.0	<10	7	0	320	6.0	10	.00
MAY , 1980 01...	1	50	10	.0	<10	0	0	200	2.0	7	.00

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05056405 BIG COULEE AT GRAHAMS ISLAND INLET NEAR FORT TOTTEN, ND

DATE	TIME	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
NOV 21...	0930	1400.00	29.12	1060	8.6	2.0	45	380	46	72	48	120
MAY 01...	0930	1400.00	26.04	1650	8.7	15.0	20	790	118	57	99	210

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)
NOV 21...	55	2.7	150	27	310	290	45	.2	11	817	808	1.11
MAY 01...	56	4.7	250	50	400	460	85	.2	8.3	1120	1070	1.52

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NOV 21...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY 01...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NOV 21...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY 01...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION, FROM TRUE NORTH (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SECCHI DISK (FEET)	SPECIFIC CONDUCTANCE (MICROMHOS)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

RED RIVER OF THE NORTH BASIN

[illegible] - LAKE DARLING NEAR [illegible], ND

[illegible]

[illegible] - LAKE DARLING [illegible] NEAR [illegible], ND

[illegible]

[illegible]

[illegible]

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

RED RIVER OF THE NORTH BASIN

483940101414801 - LAKE DARLING NEAR GREENE, ND

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
MAR										
06...	7.5	.2	103	14.7	103	--	--	--	--	--
06...	7.9	.9	--	14.9	105	--	--	--	--	--
06...	8.0	1.5	--	14.9	107	.14	.060	.05	.470	.000
06...	7.9	2.5	--	14.0	103	--	--	--	--	--
06...	7.6	2.6	--	7.2	53	--	--	--	--	--
MAY										
21...	8.6	17.6	91.0	8.7	91	--	--	--	--	--
21...	8.6	17.6	--	8.6	90	--	--	--	--	--
21...	8.6	17.6	--	8.6	90	.00	.060	.04	5.70	.910
21...	8.6	17.6	--	8.6	90	--	--	--	--	--
21...	8.6	17.5	--	8.5	88	--	--	--	--	--
21...	8.6	17.1	--	8.3	86	--	--	--	--	--
AUG										
25...	8.8	17.8	22.8	8.2	85	--	--	--	--	--
25...	8.9	17.8	--	8.2	85	--	--	--	--	--
25...	8.9	17.8	--	8.2	85	.08	.070	.00	52.5	.000
25...	--	17.8	--	8.2	85	--	--	--	--	--
25...	8.9	17.8	--	8.1	84	--	--	--	--	--
25...	8.9	17.8	--	8.1	84	--	--	--	--	--

483644101365401 - LAKE DARLING (SHALLOW) NEAR GRANO, ND

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
MAR										
06...	7.6	.2	124	10.6	73	--	--	--	--	--
06...	7.7	1.2	--	10.4	74	--	--	--	--	--
06...	7.6	1.8	--	10.3	74	.17	.110	.12	.000	.000
06...	7.6	3.6	--	9.2	70	--	--	--	--	--
06...	7.5	3.4	--	7.8	59	--	--	--	--	--
06...	7.5	3.4	--	7.3	55	--	--	--	--	--
MAY										
21...	8.6	17.4	104	8.5	88	--	--	--	--	--
21...	8.6	17.3	--	8.5	89	--	--	--	--	--
21...	8.6	17.3	--	8.5	89	.01	.040	.04	.810	.090
21...	8.6	17.1	--	8.3	86	--	--	--	--	--
21...	8.6	17.2	--	8.3	86	--	--	--	--	--
21...	8.6	17.1	--	8.2	85	--	--	--	--	--
AUG										
25...	9.1	18.1	20.4	8.9	93	--	--	--	--	--
25...	9.3	18.1	--	8.9	93	--	--	--	--	--
25...	9.3	18.0	--	8.8	92	.00	.150	.06	29.4	.000
25...	9.3	18.0	--	8.8	92	--	--	--	--	--
25...	9.4	18.0	--	8.7	91	--	--	--	--	--
25...	9.4	18.0	--	8.8	92	--	--	--	--	--

482742101343601 - LAKE DARLING (DEEP) NEAR CARPIO, ND

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
MAR										
06...	--	--	102	--	--	--	--	--	--	--
06...	7.5	3.1	--	--	--	.16	.120	.12	.220	.000
MAY										
23...	8.6	17.3	138	8.0	84	--	--	--	--	--
23...	8.6	17.3	--	8.0	84	--	--	--	--	--
23...	8.5	17.3	--	7.9	83	.[illegible]2	.070	.06	--	--
23...	8.6	17.3	--	7.9	83	--	--	--	--	--
23...	8.6	17.3	--	7.9	83	--	--	--	--	--
23...	5.6	17.3	--	7.8	82	--	--	--	--	--
AUG										
28...	8.8	17.2	98.4	5.4	56	--	--	--	--	--
28...	--	17.1	--	5.1	52	--	--	--	--	--
28...	8.8	16.9	--	4.8	49	.00	.800	.70	13.8	.000
28...	8.8	16.9	--	4.7	48	--	--	--	--	--
28...	8.8	16.9	--	4.7	48	--	--	--	--	--
28...	8.8	16.8	--	2.5	26	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

RED RIVER OF THE NORTH BASIN

482002100452101 - BUFFALO LODGE LAKE (DEEP) NEAR RIGA, ND

DATE	TIME	SAMP- LING DEPTH (FT) (00003)	RESER- VOIR DEPTH (FEET) (72025)	RESER- VOIR ELEV- ATION (FEET ABOVE DATUM) (00062)	TEMPER- ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER- CENT) (00032)	WIND DIREC- TION (DEG, FROM TRUE NORTH) (00036)	WIND VELOC- ITY (MILES PER HOUR) (00035)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	ICE THICK- NESS (FEET) (82130)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH FIELD (UNITS) (00400)
MAR												
05...	1020	.0	10	8.48	-15.0	10	315	10	769	2.70	1390	7.6
05...	1022	1.6	--	--	--	--	--	--	--	--	1480	7.7
05...	1024	3.3	--	--	--	--	--	--	--	--	1490	7.7
05...	1026	6.6	--	--	--	--	--	--	--	--	1530	7.6
05...	1028	--	--	--	--	--	--	--	--	--	--	--
MAY												
20...	0940	.0	10	8.53	22.0	100	225	12	761	--	1040	8.4
20...	0942	1.6	--	--	--	--	--	--	--	--	1040	8.4
20...	0944	3.3	--	--	--	--	--	--	--	--	1040	8.4
20...	0946	6.6	--	--	--	--	--	--	--	--	1040	8.4
20...	0948	9.9	--	--	--	--	--	--	--	--	1040	7.8
AUG												
26...	0935	.0	9.8	7.53	11.0	100	--	.0	775	--	1100	9.4
26...	0937	1.6	--	--	--	--	--	--	--	--	978	9.5
26...	0939	3.3	--	--	--	--	--	--	--	--	977	9.5
26...	0941	6.6	--	--	--	--	--	--	--	--	973	9.5
26...	0942	9.0	--	--	--	--	--	--	--	--	972	9.5

DATE	TEMPER- ATURE, WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO- GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS- PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70954)
MAR												
05...	-.1	71.0	6.4	43	--	--	--	--	--	--	--	--
05...	1.2	--	6.2	44	--	--	--	--	--	--	--	--
05...	2.4	--	6.1	44	.03	--	--	.040	.03	--	.470	.000
05...	3.6	--	3.6	27	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	19	6670	--	--	550	--	--
MAY												
20...	16.4	126	7.8	79	--	--	--	--	--	--	--	--
20...	16.4	--	7.8	79	--	--	--	--	--	--	--	--
20...	16.4	--	7.7	78	.01	--	--	.040	.03	--	1.56	.100
20...	16.4	--	7.7	78	--	--	--	--	--	--	--	--
20...	16.4	--	6.5	66	--	--	--	--	--	--	--	--
AUG												
26...	17.8	28.8	8.9	91	--	--	--	--	--	--	--	--
26...	17.8	--	8.7	89	--	--	--	--	--	--	--	--
26...	17.8	--	8.6	88	.00	--	--	.050	.00	--	14.9	.410
26...	17.8	--	8.6	88	--	--	--	--	--	--	--	--
26...	17.8	--	8.5	87	--	--	--	--	--	--	--	--

481849100455001 - BUFFALO LODGE LAKE (SHALLOW) NEAR RIGA, ND

DATE	TIME	SAMP- LING DEPTH (FT) (00003)	RESER- VOIR DEPTH (FEET) (72025)	RESER- VOIR ELEV- ATION (FEET ABOVE DATUM) (00062)	TEMPER- ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER- CENT) (00032)	WIND DIREC- TION (DEG, FROM TRUE NORTH) (00036)	WIND VELOC- ITY (MILES PER HOUR) (00035)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	ICE THICK- NESS (FEET) (82130)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)
MAR											
07...	1050	.0	9.0	8.48	-14.0	75	225	5.0	763	2.40	1240
07...	1052	1.6	--	--	--	--	--	--	--	--	1320
07...	1054	3.3	--	--	--	--	--	--	--	--	1350
07...	1056	5.0	--	--	--	--	--	--	--	--	1405
MAY											
20...	1105	.0	4.4	8.53	25.5	100	270	12	761	--	987
20...	1107	1.6	--	--	--	--	--	--	--	--	985
20...	1109	3.3	--	--	--	--	--	--	--	--	985
AUG											
26...	1125	.0	4.5	7.53	18.0	100	--	.0	777	--	945
26...	1127	1.6	--	--	--	--	--	--	--	--	934
26...	1129	3.3	--	--	--	--	--	--	--	--	932

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

RED RIVER OF THE NORTH BASIN

481849100455001 - BUFFALO LODGE LAKE (SHALLOW) NEAR RIGA, ND

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
MAR										
07...	8.0	.2	74.0	7.6	53	--	--	--	--	--
07...	8.0	2.0	--	8.2	59	--	--	--	--	--
07...	7.8	2.7	--	5.0	37	.05	.050	.04	2.71	.000
07...	7.5	4.0	--	1.7	13	--	--	--	--	--
MAY										
20...	8.7	16.9	53.0	9.2	95	--	--	--	--	--
20...	8.6	16.9	--	9.2	95	--	--	--	--	--
20...	8.6	16.8	--	9.3	96	.05	.040	.04	1.01	.000
AUG										
26...	9.4	17.8	48.0	9.3	95	--	--	--	--	--
26...	9.4	17.4	--	8.5	86	--	--	--	--	--
26...	9.4	17.3	--	8.0	81	.00	.040	.00	13.6	.350

NELSON CREEK BASIN

481419103083301 - KOTA RA RESERVOIR (DEEP) NEAR WHEELOCK, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG, FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)
FEB												
27...	1045	.0	21	11.94	-4.0	100	135	10	745	1.60	1240	8.1
27...	1047	1.6	--	--	--	--	--	--	--	--	1310	8.0
27...	1049	3.3	--	--	--	--	--	--	--	--	1330	8.0
27...	1051	6.6	--	--	--	--	--	--	--	--	1320	8.0
27...	1053	13	--	--	--	--	--	--	--	--	1340	7.6
27...	1055	20	--	--	--	--	--	--	--	--	1370	7.5
27...	1057	--	--	--	--	--	--	--	--	--	--	--
JUN												
04...	1015	.0	23	8.43	19.0	100	135	7.5	743	--	964	8.3
04...	1017	1.6	--	--	--	--	--	--	--	--	966	8.3
04...	1019	3.3	--	--	--	--	--	--	--	--	967	8.3
04...	1021	6.6	--	--	--	--	--	--	--	--	967	8.3
04...	1023	13	--	--	--	--	--	--	--	--	968	8.2
04...	1025	19	--	--	--	--	--	--	--	--	968	8.1
AUG												
19...	1250	.0	22	6.92	21.0	45	45	7.0	745	--	898	8.4
19...	1252	1.6	--	--	--	--	--	--	--	--	990	8.4
19...	1254	3.3	--	--	--	--	--	--	--	--	1000	8.4
19...	1256	6.6	--	--	--	--	--	--	--	--	982	8.4
19...	1258	13	--	--	--	--	--	--	--	--	997	8.2
19...	1300	19	--	--	--	--	--	--	--	--	1010	8.2

DATE	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB												
27...	.4	46.0	15.8	112	--	--	--	--	--	--	--	--
27...	2.0	--	15.5	114	--	--	--	--	--	--	--	--
27...	2.8	--	15.0	113	.07	--	--	.010	.03	--	15.9	.000
27...	2.8	--	14.8	112	--	--	--	--	--	--	--	--
27...	3.4	--	14.5	111	--	--	--	--	--	--	--	--
27...	4.0	--	2.4	19	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	30	4630	--	--	450	--	--
JUN												
04...	17.4	54.0	6.8	72	--	--	--	--	--	--	--	--
04...	17.4	--	6.8	72	--	--	--	--	--	--	--	--
04...	17.5	--	6.7	71	.06	--	--	.020	.00	--	3.15	.000
04...	17.4	--	6.5	69	--	--	--	--	--	--	--	--
04...	17.2	--	5.8	61	--	--	--	--	--	--	--	--
04...	16.8	--	4.9	51	--	--	--	--	--	--	--	--
AUG												
19...	20.1	49.2	8.9	99	--	--	--	--	--	--	--	--
19...	20.1	--	8.9	99	--	--	--	--	--	--	--	--
19...	20.0	--	8.9	99	.00	--	--	.050	.00	--	11.4	.550
19...	19.0	--	7.3	80	--	--	--	--	--	--	--	--
19...	17.0	--	5.1	54	.00	--	--	.040	.00	--	--	--
19...	16.6	--	2.8	29	.00	--	--	.040	.06	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

NELSON CREEK BASIN

481406103090301 - KOTA RA RESERVOIR (SHALLOW) NEAR WHEELOCK, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)
FEB											
27...	1250	.0	9.0	11.94	-4.0	90	135	5.0	744	2.10	1060
27...	1252	1.6	--	--	--	--	--	--	--	--	1120
27...	1254	3.3	--	--	--	--	--	--	--	--	1140
27...	1256	6.6	--	--	--	--	--	--	--	--	1130
JUN											
04...	1130	.0	8.2	8.43	19.0	100	--	.0	743	--	979
04...	1132	1.6	--	--	--	--	--	--	--	--	973
04...	1134	3.3	--	--	--	--	--	--	--	--	955
AUG											
19...	1415	.0	4.5	6.92	22.0	40	135	10	745	--	1010
19...	1417	1.6	--	--	--	--	--	--	--	--	1010
19...	1419	3.3	--	--	--	--	--	--	--	--	1010

DATE	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
FEB										
27...	7.8	.4	62.0	11.8	83	--	--	--	--	--
27...	7.9	2.2	--	14.0	104	--	--	--	--	--
27...	7.9	2.6	--	13.5	101	.18	.000	.05	1.77	.000
27...	7.7	2.8	--	11.7	88	--	--	--	--	--
JUN										
04...	8.3	17.7	32.0	6.6	70	--	--	--	--	--
04...	8.3	17.7	--	6.7	71	--	--	--	--	--
04...	8.3	17.7	--	6.7	71	.03	.020	.01	3.49	.000
AUG										
19...	8.2	21.5	48.0	9.2	106	--	--	--	--	--
19...	8.1	21.0	--	9.4	106	--	--	--	--	--
19...	8.1	21.0	--	9.3	105	.00	.040	.00	14.8	.000

WHITE EARTH RIVER BASIN

482731102443401 - WHITE EARTH RESERVOIR (DEEP) NEAR WHITE EARTH, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)
FEB												
26...	1115	.0	21	--	-2.0	10	315	10	745	2.70	1780	8.8
26...	1117	1.6	--	--	--	--	--	--	--	--	1840	8.8
26...	1119	3.3	--	--	--	--	--	--	--	--	1850	8.8
26...	1121	6.6	--	--	--	--	--	--	--	--	1870	8.6
26...	1123	13	--	--	--	--	--	--	--	--	2440	8.0
26...	1125	15	--	--	--	--	--	--	--	--	2560	7.8
26...	1127	--	--	--	--	--	--	--	--	--	--	--
JUN												
05...	0925	.0	21	8.92	17.0	10	180	7.5	743	--	1900	8.5
05...	0927	1.6	--	--	--	--	--	--	--	--	1860	8.5
05...	0929	3.3	--	--	--	--	--	--	--	--	1850	8.5
05...	0931	6.6	--	--	--	--	--	--	--	--	1850	8.5
05...	0933	13	--	--	--	--	--	--	--	--	1850	8.5
05...	0935	19	--	--	--	--	--	--	--	--	1860	8.3
AUG												
20...	0950	.0	13	8.47	17.0	100	225	12	750	--	1950	9.0
20...	0952	1.6	--	--	--	--	--	--	--	--	1950	9.0
20...	0954	3.3	--	--	--	--	--	--	--	--	1950	9.0
20...	0956	6.6	--	--	--	--	--	--	--	--	1950	9.0
20...	0958	9.9	--	--	--	--	--	--	--	--	1950	9.0

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

WHITE EARTH RIVER BASIN

482731102443401 - WHITE EARTH RESERVOIR (DEEP) NEAR WHITE EARTH, ND

DATE	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB												
26...	.2	35.0	11.3	80	--	--	--	--	--	--	--	--
26...	1.3	--	11.3	88	--	--	--	--	--	--	--	--
26...	1.8	--	11.1	82	.03	--	--	.080	.05	--	7.46	.000
26...	2.4	--	8.9	66	--	--	--	--	--	--	--	--
26...	3.1	--	4.9	37	--	--	--	--	--	--	--	--
26...	3.5	--	4.8	37	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	7.4	2790	--	--	650	--	--
JUN												
05...	17.2	18.0	9.1	96	--	--	--	--	--	--	--	--
05...	17.1	--	8.8	93	--	--	--	--	--	--	--	--
05...	17.0	--	8.2	86	.02	--	--	.210	.15	--	14.4	1.47
05...	17.0	--	8.1	85	--	--	--	--	--	--	--	--
05...	16.8	--	7.5	79	--	--	--	--	--	--	--	--
05...	16.6	--	2.8	29	--	--	--	--	--	--	--	--
AUG												
20...	19.0	19.2	7.0	76	--	--	--	--	--	--	--	--
20...	19.0	--	7.0	76	--	--	--	--	--	--	--	--
20...	19.0	--	7.0	76	.02	--	--	.160	.05	--	13.6	.000
20...	19.0	--	6.9	75	--	--	--	--	--	--	--	--
20...	18.9	--	6.9	75	--	--	--	--	--	--	--	--

482822102443301 - WHITE EARTH RESERVOIR (SHALLOW) NEAR WHITE EARTH, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
JUN										
05...	1055	.0	7.5	8.92	20.0	10	270	7.5	743	2130
05...	1057	1.6	--	--	--	--	--	--	--	2110
05...	1059	3.3	--	--	--	--	--	--	--	2120
AUG										
20...	1105	.0	7.0	8.47	18.0	90	270	12	745	2010
20...	1107	1.6	--	--	--	--	--	--	--	1960
20...	1109	3.3	--	--	--	--	--	--	--	1940

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
JUN										
05...	8.6	17.9	17.0	7.5	80	--	--	--	--	--
05...	8.6	17.9	--	7.3	78	--	--	--	--	--
05...	8.5	17.5	--	6.2	66	.04	.140	.08	16.6	1.46
AUG										
20...	9.0	18.3	16.8	5.0	54	--	--	--	--	--
20...	8.9	18.1	--	3.6	39	--	--	--	--	--
20...	8.9	17.5	--	2.3	24	.11	.320	.15	49.4	7.12

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)

LITTLE MISSOURI RIVER BASIN

465649103484901 - CAMEL HUMP RESERVOIR (DEEP) NEAR SENTINEL BUTTE, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)
FEB												
13...	1025	.0	30	--	--	100	270	10	734	1.70	1470	8.3
13...	1027	1.6	--	--	--	--	--	--	--	--	1220	8.3
13...	1029	3.3	--	--	--	--	--	--	--	--	1630	8.3
13...	1031	6.6	--	--	--	--	--	--	--	--	1630	8.2
13...	1033	13	--	--	--	--	--	--	--	--	1640	8.0
13...	1035	19	--	--	--	--	--	--	--	--	1670	7.6
13...	1037	26	--	--	--	--	--	--	--	--	1700	7.6
13...	1039	29	--	--	--	--	--	--	--	--	1710	7.5
13...	1041	--	--	--	--	--	--	--	--	--	--	--
MAY												
14...	0940	.0	30	4.15	12.0	0	145	12	734	--	1430	8.3
14...	0942	1.6	--	--	--	--	--	--	--	--	1360	8.3
14...	0944	3.3	--	--	--	--	--	--	--	--	1360	8.3
14...	0946	6.6	--	--	--	--	--	--	--	--	1360	8.3
14...	0948	13	--	--	--	--	--	--	--	--	1350	8.1
14...	0950	19	--	--	--	--	--	--	--	--	1310	7.7
14...	0952	26	--	--	--	--	--	--	--	--	1240	7.5
14...	0954	29	--	--	--	--	--	--	--	--	1270	7.5
AUG												
07...	1005	.0	30	2.09	17.0	100	45	5.0	738	--	1280	7.1
07...	1007	1.6	--	--	--	--	--	--	--	--	1270	--
07...	1009	3.3	--	--	--	--	--	--	--	--	1270	7.3
07...	1011	6.6	--	--	--	--	--	--	--	--	1270	7.3
07...	1013	13	--	--	--	--	--	--	--	--	1250	7.2
07...	1015	19	--	--	--	--	--	--	--	--	1260	6.9
07...	1017	26	--	--	--	--	--	--	--	--	1260	--
07...	1019	29	--	--	--	--	--	--	--	--	1260	--

DATE	TEMPERATURE, WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITROGEN, NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
FEB												
13...	1.0	--	11.6	84	--	--	--	--	--	--	--	--
13...	2.9	--	12.2	94	--	--	--	--	--	--	--	--
13...	3.2	--	12.1	93	.03	--	--	.000	.01	--	12.4	.000
13...	3.2	--	11.8	91	--	--	--	--	--	--	--	--
13...	3.4	--	8.2	64	--	--	--	--	--	--	--	--
13...	3.7	--	4.1	32	--	--	--	--	--	--	--	--
13...	3.8	--	4.1	32	--	--	--	--	--	--	--	--
13...	3.8	--	3.6	28	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	.0	2650	--	--	480	--	--
MAY												
14...	13.3	120	8.4	83	--	--	--	--	--	--	--	--
14...	13.3	--	8.3	82	--	--	--	--	--	--	--	--
14...	13.3	--	8.5	84	.03	--	--	.020	.01	--	2.86	.000
14...	13.3	--	8.5	84	--	--	--	--	--	--	--	--
14...	13.1	--	6.6	65	--	--	--	--	--	--	--	--
14...	11.7	--	1.6	15	--	--	--	--	--	--	--	--
14...	8.1	--	.2	0	--	--	--	--	--	--	--	--
14...	7.6	--	.2	0	--	--	--	--	--	--	--	--
AUG												
07...	18.8	55.2	7.8	86	--	--	--	--	--	--	--	--
07...	18.8	--	8.0	88	--	--	--	--	--	--	--	--
07...	18.8	--	8.0	88	.03	--	--	.040	.00	--	12.7	.750
07...	18.8	--	7.8	86	--	--	--	--	--	--	--	--
07...	17.4	--	5.7	61	.01	--	--	.040	.01	--	--	--
07...	17.1	--	4.7	50	--	--	--	--	--	--	--	--
07...	16.8	--	2.7	29	--	--	--	--	--	--	--	--
07...	16.5	--	.3	0	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG, FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
LITTLE MISSOURI RIVER BASIN											
465703103493701 - CAMEL HUMP RESERVOIR (SHALLOW) NEAR SENTINEL BUTTE, ND											
FEB											
13...	1330	.0	5.6	--	--	100	315	10	735	1.80	1330
13...	1332	1.6	--	--	--	--	--	--	--	--	1380
13...	1334	3.3	--	--	--	--	--	--	--	--	1380
MAY											
14...	1115	.0	6.6	4.15	14.0	0	135	7.5	734	--	1390
14...	1117	1.6	--	--	--	--	--	--	--	--	1380
14...	1119	3.3	--	--	--	--	--	--	--	--	1380
14...	1121	6.6	--	--	--	--	--	--	--	--	1390
AUG											
07...	1155	.0	4.6	2.09	20.0	90	--	5.0	739	--	1310
07...	1157	1.6	--	--	--	--	--	--	--	--	1300
07...	1159	3.3	--	--	--	--	--	--	--	--	1290

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB										
13...	8.1	1.7	--	14.5	107	--	--	--	--	--
13...	8.2	3.0	--	14.3	110	--	--	--	--	--
13...	8.2	3.2	--	13.9	107	.13	.010	.04	15.4	.000
MAY										
14...	8.5	13.9	74.0	9.6	97	--	--	--	--	--
14...	8.5	13.9	--	9.5	96	--	--	--	--	--
14...	8.5	13.8	--	9.6	96	.05	.030	.01	1.98	.000
14...	8.5	13.4	--	10.3	102	--	--	--	--	--
AUG										
07...	7.1	19.4	44.0	8.0	89	--	--	--	--	--
07...	7.4	19.4	--	8.2	91	--	--	--	--	--
07...	7.5	19.2	--	8.2	91	.02	.040	.00	9.53	3.95

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG, FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)
DOUGLAS CREEK BASIN												
480032101314701 - RICE LAKE (DEEP) NEAR RYDER, ND												
FEB												
28...	1310	.0	24	--	-14.0	25	45	10	760	2.30	2250	8.8
28...	1312	1.6	--	--	--	--	--	--	--	--	2350	8.8
28...	1314	3.3	--	--	--	--	--	--	--	--	2380	8.8
28...	1316	6.6	--	--	--	--	--	--	--	--	2400	8.7
28...	1318	13	--	--	--	--	--	--	--	--	2430	8.6
28...	1320	20	--	--	--	--	--	--	--	--	2490	8.5
28...	1322	--	--	--	--	--	--	--	--	--	--	--
MAY												
22...	1040	.0	26	5.26	10.0	10	12	180	760	--	1700	8.8
22...	1042	1.6	--	--	--	--	--	--	--	--	1700	8.8
22...	1044	3.3	--	--	--	--	--	--	--	--	1700	8.8
22...	1046	6.6	--	--	--	--	--	--	--	--	1700	8.8
22...	1048	13	--	--	--	--	--	--	--	--	1690	8.8
22...	1050	19	--	--	--	--	--	--	--	--	1680	8.8
22...	1052	26	--	--	--	--	--	--	--	--	1700	8.8
AUG												
27...	1030	.0	26	4.70	15.0	0	--	.0	750	--	1830	9.0
27...	1032	1.6	--	--	--	--	--	--	--	--	1730	9.0
27...	1034	3.3	--	--	--	--	--	--	--	--	1723	9.0
27...	1036	6.6	--	--	--	--	--	--	--	--	1720	9.0
27...	1038	13	--	--	--	--	--	--	--	--	1720	9.0
27...	1040	19	--	--	--	--	--	--	--	--	1720	9.0
27...	1042	26	--	--	--	--	--	--	--	--	1720	9.0

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DOUGLAS CREEK BASIN

480032101314701 - RICE LAKE (DEEP) NEAR RYDER, ND

DATE	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB												
28...	1.4	54.0	12.2	87	--	--	--	--	--	--	--	--
28...	1.3	--	11.9	84	--	--	--	--	--	--	--	--
28...	2.7	--	11.6	83	.09	--	--	.000	.03	--	16.1	.000
28...	3.4	--	9.4	71	--	--	--	--	--	--	--	--
28...	3.9	--	7.4	56	--	--	--	--	--	--	--	--
28...	4.3	--	3.2	25	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	10	9980	--	--	460	--	--
MAY												
22...	17.2	194	8.0	83	--	--	--	--	--	--	--	--
22...	17.1	--	7.9	81	--	--	--	--	--	--	--	--
22...	17.1	--	7.9	82	.02	--	--	.030	.05	--	.410	.000
22...	17.1	--	7.9	81	--	--	--	--	--	--	--	--
22...	16.3	--	7.6	77	--	--	--	--	--	--	--	--
22...	14.0	--	7.0	68	--	--	--	--	--	--	--	--
22...	12.1	--	4.3	40	--	--	--	--	--	--	--	--
AUG												
27...	17.2	48.0	7.0	73	--	--	--	--	--	--	--	--
27...	17.2	--	6.9	72	--	--	--	--	--	--	--	--
27...	17.2	--	6.8	71	.00	--	--	.030	.00	--	5.49	.000
27...	17.2	--	6.8	71	--	--	--	--	--	--	--	--
27...	17.1	--	6.8	71	--	--	--	--	--	--	--	--
27...	17.0	--	6.7	70	--	--	--	--	--	--	--	--
27...	16.9	--	6.4	67	--	--	--	--	--	--	--	--

480026101322501 - RICE LAKE (SHALLOW) NEAR RYDER, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG, FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
FEB											
28...	1515	.0	7.0	--	-14.0	40	45	10	760	2.40	1920
28...	1517	1.6	--	--	--	--	--	--	--	--	1980
28...	1519	3.3	--	--	--	--	--	--	--	--	2040
MAY											
22...	1215	.0	5.4	5.26	29.0	25	180	20	760	--	1700
22...	1217	1.6	--	--	--	--	--	--	--	--	1690
22...	1219	3.3	--	--	--	--	--	--	--	--	1690
AUG											
27...	1100	.0	6.0	4.70	15.0	0	180	10	753	--	1740
27...	1102	1.6	--	--	--	--	--	--	--	--	1730
27...	1104	3.3	--	--	--	--	--	--	--	--	1730

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB										
28...	8.6	1.0	49.0	10.6	75	--	--	--	--	--
28...	8.6	2.0	--	10.4	75	--	--	--	--	--
28...	8.5	2.8	--	7.8	58	.08	.010	.01	13.9	.000
MAY										
22...	8.8	17.4	65.0	7.5	78	--	--	--	--	--
22...	8.8	17.3	--	7.5	78	--	--	--	--	--
22...	8.8	17.4	--	7.5	78	.01	.020	.04	--	--
AUG										
27...	9.0	16.3	55.2	7.3	75	--	--	--	--	--
27...	9.0	16.3	--	7.3	75	--	--	--	--	--
27...	9.0	16.3	--	7.3	75	.00	.020	.00	2.50	.000

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)

SQUARE BUTTE CREEK BASIN

470405101121701 - NELSON LAKE (DEEP) NEAR CENTER, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)
FEB												
20...	1145	.0	35	--	-3.0	100	225	5.0	746	1360	8.5	6.0
20...	1147	1.6	--	--	--	--	--	--	--	1360	8.4	6.2
20...	1149	3.3	--	--	--	--	--	--	--	1360	8.4	6.2
20...	1151	6.6	--	--	--	--	--	--	--	1360	8.4	6.2
20...	1153	13	--	--	--	--	--	--	--	1360	8.4	6.2
20...	1155	20	--	--	--	--	--	--	--	1360	8.4	6.2
20...	1157	26	--	--	--	--	--	--	--	1360	8.4	6.1
20...	1159	--	--	--	--	--	--	--	--	--	--	--
MAY												
28...	1030	.0	32	23.70	22.0	80	225	7.5	743	1610	8.3	23.4
28...	1032	1.6	--	--	--	--	--	--	--	1590	8.3	23.4
28...	1034	3.3	--	--	--	--	--	--	--	1593	8.3	23.4
28...	1036	6.6	--	--	--	--	--	--	--	1590	8.3	23.3
28...	1038	13	--	--	--	--	--	--	--	1580	8.3	23.1
28...	1040	19	--	--	--	--	--	--	--	1590	8.3	23.0
28...	1042	26	--	--	--	--	--	--	--	1480	8.2	21.4
28...	1044	29	--	--	--	--	--	--	--	1490	8.3	21.0
SEP												
09...	1025	.0	33	--	19.0	10	45	8.0	765	1710	8.3	23.4
09...	1027	1.6	--	--	--	--	--	--	--	1700	--	23.5
09...	1029	3.3	--	--	--	--	--	--	--	1704	8.4	23.4
09...	1031	6.6	--	--	--	--	--	--	--	1710	8.4	23.5
09...	1033	13	--	--	--	--	--	--	--	1710	8.4	23.5
09...	1035	19	--	--	--	--	--	--	--	1710	8.4	23.5
09...	1037	26	--	--	--	--	--	--	--	1700	8.4	23.5
09...	1039	28	--	--	--	--	--	--	--	1700	--	23.5

DATE	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITROGEN, NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
FEB											
20...	37.0	10.9	89	--	--	--	--	--	--	--	--
20...	--	10.8	89	--	--	--	--	--	--	--	--
20...	--	10.9	90	.33	--	--	.010	.01	--	12.2	.000
20...	--	10.9	90	--	--	--	--	--	--	--	--
20...	--	10.8	89	--	--	--	--	--	--	--	--
20...	--	10.8	89	--	--	--	--	--	--	--	--
20...	--	10.8	89	--	--	--	--	--	--	--	--
20...	--	--	--	--	6.0	2360	--	--	600	--	--
MAY											
28...	55.0	6.6	79	--	--	--	--	--	--	--	--
28...	--	6.5	78	--	--	--	--	--	--	--	--
28...	--	6.5	78	.08	--	--	.020	.04	--	6.31	1.83
28...	--	6.4	76	--	--	--	--	--	--	--	--
28...	--	6.4	76	--	--	--	--	--	--	--	--
28...	--	6.3	75	--	--	--	--	--	--	--	--
28...	--	5.5	63	--	--	--	--	--	--	--	--
28...	--	5.7	65	--	--	--	--	--	--	--	--
SEP											
09...	33.6	5.6	65	--	--	--	--	--	--	--	--
09...	--	5.6	65	--	--	--	--	--	--	--	--
09...	--	5.6	65	.56	--	--	.020	.00	--	15.2	.000
09...	--	5.6	65	--	--	--	--	--	--	--	--
09...	--	5.5	64	--	--	--	--	--	--	--	--
09...	--	5.5	64	--	--	--	--	--	--	--	--
09...	--	5.5	64	--	--	--	--	--	--	--	--
09...	--	3.3	38	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

SQUARE BUTTE CREEK BASIN

470459101133501 - NELSON LAKE (SHALLOW) NEAR CENTER, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG, FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
FEB										
20...	1445	.0	7.0	--	-3.0	100	135	10	748	1380
20...	1447	1.6	--	--	--	--	--	--	--	1380
20...	1449	3.3	--	--	--	--	--	--	--	1370
20...	1451	6.6	--	--	--	--	--	--	--	1350
MAY										
28...	1255	.0	4.9	23.70	24.5	85	225	10	747	1600
28...	1257	1.6	--	--	--	--	--	--	--	1600
28...	1259	3.3	--	--	--	--	--	--	--	1580
SEP										
09...	1205	.0	6.8	--	16.0	0	337	8.0	770	1870
09...	1207	1.6	--	--	--	--	--	--	--	1730
09...	1209	3.3	--	--	--	--	--	--	--	1690
09...	1211	6.0	--	--	--	--	--	--	--	1660

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB										
20...	8.3	13.2	20.0	10.4	101	--	--	--	--	--
20...	8.3	13.3	--	10.4	101	--	--	--	--	--
20...	8.3	13.0	--	10.4	100	.28	.010	.01	12.7	.000
20...	8.3	12.2	--	10.2	97	--	--	--	--	--
MAY										
28...	8.3	28.4	25.0	6.3	82	--	--	--	--	--
28...	8.3	28.0	--	6.3	81	--	--	--	--	--
28...	8.4	26.9	--	6.5	82	.14	.030	.08	5.00	.700
SEP										
09...	8.4	28.8	31.2	5.8	74	--	--	--	--	--
09...	--	29.0	--	5.8	74	--	--	--	--	--
09...	8.4	27.1	--	5.6	69	.54	.020	.00	12.1	1.04
09...	8.5	19.9	--	5.2	56	--	--	--	--	--

HEART RIVER BASIN

464345101134401 - FISH CREEK RESERVOIR (DEEP) NEAR JUDSON, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG, FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)
FEB												
21...	1035	.0	33	--	-4.0	100	225	5.0	751	1.80	794	8.7
21...	1037	1.6	--	--	--	--	--	--	--	--	844	8.7
21...	1039	3.3	--	--	--	--	--	--	--	--	862	8.7
21...	1041	6.6	--	--	--	--	--	--	--	--	863	8.6
21...	1043	13	--	--	--	--	--	--	--	--	857	8.6
21...	1045	20	--	--	--	--	--	--	--	--	856	8.4
21...	1047	26	--	--	--	--	--	--	--	--	861	8.2
21...	1049	30	--	--	--	--	--	--	--	--	862	8.1
21...	1051	--	--	--	--	--	--	--	--	--	--	--
MAY												
29...	1005	.0	43	11.20	18.5	100	270	7.5	750	--	839	8.5
29...	1007	1.6	--	--	--	--	--	--	--	--	838	8.5
29...	1009	3.3	--	--	--	--	--	--	--	--	838	8.5
29...	1011	6.6	--	--	--	--	--	--	--	--	833	8.6
29...	1013	13	--	--	--	--	--	--	--	--	825	8.5
29...	1015	19	--	--	--	--	--	--	--	--	824	8.5
29...	1017	26	--	--	--	--	--	--	--	--	752	8.1
29...	1019	33	--	--	--	--	--	--	--	--	775	8.0
29...	1021	39	--	--	--	--	--	--	--	--	736	7.9
SEP												
03...	1030	.0	50	--	19.0	100	90	5.0	752	--	812	8.6
03...	1032	1.6	--	--	--	--	--	--	--	--	832	--
03...	1034	3.3	--	--	--	--	--	--	--	--	834	8.7
03...	1036	6.6	--	--	--	--	--	--	--	--	840	8.7
03...	1038	13	--	--	--	--	--	--	--	--	842	8.7
03...	1040	19	--	--	--	--	--	--	--	--	829	8.7
03...	1042	26	--	--	--	--	--	--	--	--	735	8.6
03...	1044	33	--	--	--	--	--	--	--	--	661	8.1
03...	1046	39	--	--	--	--	--	--	--	--	846	7.9
03...	1048	49	--	--	--	--	--	--	--	--	855	7.7

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

HEART RIVER BASIN

464345101134401 - FISH CREEK RESERVOIR (DEEP) NEAR JUDSON, ND

DATE	TEMPER- ATURE, WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO- GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS- PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70954)
FEB												
21...	.9	24.0	12.7	90	--	--	--	--	--	--	--	--
21...	2.4	--	12.1	90	--	--	--	--	--	--	--	--
21...	3.2	--	11.5	87	.06	--	--	.020	.00	--	13.2	.000
21...	3.4	--	11.1	83	--	--	--	--	--	--	--	--
21...	3.6	--	10.4	80	--	--	--	--	--	--	--	--
21...	3.7	--	8.4	64	--	--	--	--	--	--	--	--
21...	3.8	--	4.5	35	--	--	--	--	--	--	--	--
21...	3.9	--	3.7	29	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	4.8	4670	--	--	600	--	--
MAY												
29...	18.4	89.0	8.2	79	--	--	--	--	--	--	--	--
29...	18.4	--	8.1	78	--	--	--	--	--	--	--	--
29...	18.4	--	8.1	78	.06	--	--	.020	.04	--	4.44	.250
29...	18.0	--	7.9	84	--	--	--	--	--	--	--	--
29...	17.4	--	7.3	77	--	--	--	--	--	--	--	--
29...	17.0	--	6.7	70	--	--	--	--	--	--	--	--
29...	7.7	--	1.0	0	--	--	--	--	--	--	--	--
29...	6.1	--	.2	0	--	--	--	--	--	--	--	--
29...	5.3	--	.2	0	--	--	--	--	--	--	--	--
SEP												
03...	18.1	49.2	7.6	81	--	--	--	--	--	--	--	--
03...	18.0	--	7.6	81	--	--	--	--	--	--	--	--
03...	18.0	--	7.5	80	.00	--	--	.030	.00	--	21.1	.000
03...	17.9	--	7.5	80	--	--	--	--	--	--	--	--
03...	17.9	--	7.6	81	--	--	--	--	--	--	--	--
03...	17.6	--	6.4	68	--	--	--	--	--	--	--	--
03...	16.6	--	3.1	32	.00	--	--	.050	.00	--	--	--
03...	14.9	--	.5	1	--	--	--	--	--	--	--	--
03...	9.9	--	.4	0	--	--	--	--	--	--	--	--
03...	7.2	--	.5	0	.00	--	--	.540	.49	--	--	--

464404101141301 - FISH CREEK RESERVOIR (SHALLOW) NEAR JUDSON, ND

DATE	TIME	SAMP- LING DEPTH (FT) (00003)	RESER- VOIR DEPTH (FEET) (72025)	RESER- VOIR ELEV- ATION (FEET ABOVE DATUM) (00062)	TEMPER- ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER- CENT) (00032)	WIND DIREC- TION (DEG, FROM TRUE NORTH) (00036)	WIND VELOC- ITY (MILES PER HOUR) (00035)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	ICE THICK- NESS (FEET) (82130)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)
FEB											
21...	1420	.0	6.0	--	-2.0	100	135	5.0	749	2.00	798
21...	1422	1.6	--	--	--	--	--	--	--	--	837
21...	1424	3.3	--	--	--	--	--	--	--	--	851
MAY											
29...	1155	.0	6.9	11.20	20.0	100	45	7.5	750	--	850
29...	1157	1.6	--	--	--	--	--	--	--	--	850
29...	1159	3.3	--	--	--	--	--	--	--	--	847
SEP											
03...	1230	.0	6.3	--	19.0	100	225	10	750	--	841
03...	1232	1.6	--	--	--	--	--	--	--	--	815
03...	1234	3.3	--	--	--	--	--	--	--	--	820

DATE	PH FIELD (UNITS) (00400)	TEMPER- ATURE, WATER (DEG C) (00010)	TRANS- PAR- ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70954)
FEB										
21...	8.5	.7	22.0	12.2	101	--	--	--	--	--
21...	8.5	2.0	--	12.0	88	--	--	--	--	--
21...	8.5	2.7	--	12.2	91	.03	.020	.00	12.0	.000
MAY										
29...	8.6	18.8	43.0	7.4	80	--	--	--	--	--
29...	8.6	18.8	--	7.3	79	--	--	--	--	--
29...	8.5	18.6	--	6.4	69	.02	.030	.06	9.01	.850
SEP										
03...	8.4	18.3	10.8	6.2	66	--	--	--	--	--
03...	--	18.3	--	6.2	66	--	--	--	--	--
03...	8.5	18.2	--	6.3	67	.00	.040	.00	23.5	.000

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

HEART RIVER BASIN

06348882 - CROWN BUTTE LAKE (DEEP) NEAR MANDAN, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)
OCT											
04...	1025	.0	23	28.02	13.5	0	315	5.0	712	--	692
04...	1027	1.6	--	--	--	--	--	--	--	--	642
04...	1029	3.3	--	--	--	--	--	--	--	--	638
04...	1031	6.6	--	--	--	--	--	--	--	--	629
04...	1033	13	--	--	--	--	--	--	--	--	627
04...	1035	19	--	--	--	--	--	--	--	--	621
JAN											
28...	1155	.0	17	--	-20.0	0	315	10	763	1.50	911
28...	1157	1.6	--	--	--	--	--	--	--	--	922
28...	1159	3.3	--	--	--	--	--	--	--	--	917
28...	1201	6.6	--	--	--	--	--	--	--	--	906
28...	1203	13	--	--	--	--	--	--	--	--	918
28...	1205	--	--	--	--	--	--	--	--	--	--
MAY											
15...	1145	.0	19	21.34	17.5	0	135	12	756	--	911
15...	1147	1.6	--	--	--	--	--	--	--	--	952
15...	1149	3.3	--	--	--	--	--	--	--	--	951
15...	1151	6.6	--	--	--	--	--	--	--	--	948
15...	1153	13	--	--	--	--	--	--	--	--	944
15...	1155	17	--	--	--	--	--	--	--	--	920
JUN											
25...	1010	.0	16	19.50	25.0	40	315	5.0	729	--	843
25...	1012	1.6	--	--	--	--	--	--	--	--	870
25...	1014	3.3	--	--	--	--	--	--	--	--	872
25...	1016	6.6	--	--	--	--	--	--	--	--	876
25...	1018	13	--	--	--	--	--	--	--	--	373
25...	1020	15	--	--	--	--	--	--	--	--	870
AUG											
08...	1100	.0	15	18.70	21.0	15	315	5.0	760	--	890
08...	1102	1.6	--	--	--	--	--	--	--	--	914
08...	1104	3.3	--	--	--	--	--	--	--	--	920
08...	1106	6.6	--	--	--	--	--	--	--	--	920
08...	1108	13	--	--	--	--	--	--	--	--	914
SEP											
24...	1030	.0	18	21.62	12.0	40	45	5.0	754	--	826
24...	1032	1.6	--	--	--	--	--	--	--	--	796
24...	1034	3.3	--	--	--	--	--	--	--	--	788
24...	1036	6.6	--	--	--	--	--	--	--	--	785
24...	1038	13	--	--	--	--	--	--	--	--	786
24...	1040	17	--	--	--	--	--	--	--	--	788

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)

HEART RIVER BASIN

06348882 - CROWN BUTTE LAKE (DEEP) NEAR MANDAN, ND

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)
OCT										
04...	8.2	11.8	12.0	7.4	73	--	--	--	--	--
04...	8.4	11.8	--	7.4	73	--	--	--	--	--
04...	8.4	11.8	--	7.4	73	.04	--	--	.010	.01
04...	8.5	11.6	--	7.4	72	--	--	--	--	--
04...	8.6	11.6	--	7.4	72	--	--	--	--	--
04...	8.6	11.1	--	7.5	72	--	--	--	--	--
JAN										
28...	8.6	2.8	46.0	14.8	110	--	--	--	--	--
28...	8.6	3.0	--	14.7	109	--	--	--	--	--
28...	8.6	3.1	--	14.7	109	.12	--	--	.050	.02
28...	8.6	3.2	--	14.8	110	--	--	--	--	--
28...	8.3	3.9	--	13.4	102	--	--	--	--	--
28...	--	--	--	--	--	--	8.8	3810	--	--
MAY										
15...	8.6	13.7	56.1	9.0	87	--	--	--	--	--
15...	8.6	13.6	--	9.0	87	--	--	--	--	--
15...	8.6	13.6	--	8.9	86	.03	--	--	.060	.01
15...	8.6	13.4	--	8.9	85	--	--	--	--	--
15...	8.6	12.8	--	8.9	84	--	--	--	--	--
15...	7.8	10.2	--	7.3	65	--	--	--	--	--
JUN										
25...	9.2	22.3	55.0	9.4	114	--	--	--	--	--
25...	9.2	22.5	--	9.4	114	--	--	--	--	--
25...	9.2	22.5	--	9.4	114	.02	--	--	.050	.04
25...	9.2	22.4	--	9.4	114	--	--	--	--	--
25...	9.1	21.8	--	6.7	80	--	--	--	--	--
25...	8.8	20.7	--	2.1	25	--	--	--	--	--
AUG										
08...	--	21.2	24.0	9.0	101	--	--	--	--	--
08...	--	21.1	--	8.9	99	--	--	--	--	--
08...	8.2	20.8	--	8.8	98	.00	--	--	.070	.01
08...	8.0	20.6	--	8.0	88	.00	--	--	.070	.01
08...	7.7	17.9	--	1.1	12	.01	--	--	.140	.08
SEP										
24...	8.5	14.0	21.6	9.1	89	--	--	--	--	--
24...	8.7	14.0	--	8.8	85	--	--	--	--	--
24...	8.6	14.0	--	7.5	73	.00	--	--	.040	.00
24...	8.6	13.5	--	6.3	61	--	--	--	--	--
24...	8.5	13.3	--	4.6	44	--	--	--	--	--
24...	8.5	13.2	--	3.7	35	--	--	--	--	--

DATE	PHOS-PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
JAN										
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	10	2	100	230	2	0	<3	2	10
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	500	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
					HEART RIVER BASIN					
			06348882 - CROWN BUTTE LAKE (DEEP) NEAR MANDAN, ND							
OCT										
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	290000	33.6	.000
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--
JAN										
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	3	10	.1	<10	0	4	.00	63000	16.8	.000
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
MAY										
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	26	.780	.000
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
JUN										
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	130000	21.0	.000
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
AUG										
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	150000	72.2	3.75
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
SEP										
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	170000	48.8	.000
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

HEART RIVER BASIN

06348882 - CROWN BUTTE LAKE (DEEP) NEAR MANDAN, ND

DATE	OCT 4,79	JAN 28,80	MAY 15,80	JUN 25,80	AUG 8,80	SEP 24,80
TIME	1029	1159	1149	1010	1104	1034
TOTAL CELLS/ML	290000	63000	26	130000	150000	170000
DIVERSITY: DIVISION	0.1	0.2	1.0	0.0	0.2	0.0
.CLASS	0.1	0.2	1.0	0.0	0.2	0.0
..ORDER	0.7	0.2	1.0	0.0	0.5	0.9
...FAMILY	0.8	0.2	1.0	0.0	1.1	1.2
....GENUS	0.8	0.5	1.0	0.0	1.1	1.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	*	0	--	-	--	-
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	*	0	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	980	2	--	-	--	-	*	0	--	-
....CHLORELLA	--	-	59000#	92	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	2400	4	--	-	--	-	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....DOROCOCCUS	*	0	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	13#	50	*	0	1200	1	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	*	0	1500	2	--	-	--	-	--	-	*	0
....STEPHANODISCUS	*	0	--	-	--	-	--	-	--	-	--	-
..PENNALES												
...FRAGILARIACEAE												
....ASTERIONELLA	*	0	--	-	--	-	--	-	--	-	--	-
....FRAGILARIA	*	0	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	*	0	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	--	-	--	-	13#	50	--	-	2500	2	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	--	-	--	-	*	0	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	*	0	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	28000#	17
....ANACYSTIS	230000#	82	--	-	--	-	*	0	5200	3	22000	13
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	1900	1	--	-	--	-	--	-	--	-	*	0
....APHANIZOMENON	--	-	--	-	--	-	130000#	100	120000#	76	10000	6
...OSCILLATORIACEAE												
....OSCILLATORIA	47000#	16	--	-	--	-	--	-	26000#	17	110000#	64
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	*	0	--	-
....TRACHELOMONAS	*	0	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

HEART RIVER BASIN

06348880 - CROWN BUTTE LAKE (SHALLOW) NEAR MANDAN, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)
OCT											
04...	1250	.0	4.9	28.02	19.0	0	225	5.0	709	--	580
04...	1252	1.6	--	--	--	--	--	--	--	--	622
04...	1254	3.3	--	--	--	--	--	--	--	--	610
JAN											
28...	1530	.0	6.8	--	-21.0	0	315	15	763	1.50	837
28...	1532	1.6	--	--	--	--	--	--	--	--	862
28...	1534	3.3	--	--	--	--	--	--	--	--	897
MAY											
15...	1320	.0	6.7	21.34	20.0	60	135	7.5	756	--	975
15...	1322	1.6	--	--	--	--	--	--	--	--	962
15...	1324	3.3	--	--	--	--	--	--	--	--	962
JUN											
25...	1125	.0	9.2	19.50	36.0	50	315	7.5	729	--	872
25...	1127	1.6	--	--	--	--	--	--	--	--	868
25...	1129	3.3	--	--	--	--	--	--	--	--	864
25...	1131	6.6	--	--	--	--	--	--	--	--	866
AUG											
08...	1220	.0	5.6	18.70	23.0	20	315	5.0	760	--	922
08...	1222	1.6	--	--	--	--	--	--	--	--	908
08...	1224	3.3	--	--	--	--	--	--	--	--	900
SEP											
24...	1120	.0	6.4	21.62	15.0	90	45	5.0	753	--	[illegible]
24...	1122	1.6	--	--	--	--	--	--	--	--	794
24...	1124	3.3	--	--	--	--	--	--	--	--	791
24...	1126	5.0	--	--	--	--	--	--	--	--	800

DATE	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUORUM (UG/L) (70954)
OCT											
04...	7.3	11.9	14.0	--	--	--	--	--	--	--	--
04...	7.3	11.8	--	6.5	64	--	--	--	--	--	--
04...	7.4	11.0	--	6.4	64	.08	.020	.08	910000	32.2	.000
JAN											
28...	9.0	.9	34.8	21.5	151	--	--	--	--	--	--
28...	8.9	2.0	--	20.7	149	--	--	--	--	--	--
28...	8.5	2.0	--	17.1	127	.12	.030	.01	78000	7.20	.000
MAY											
15...	8.8	15.9	76.0	12.7	129	--	--	--	--	--	--
15...	8.8	15.8	--	12.5	126	--	--	--	--	--	--
15...	8.8	15.6	--	12.8	129	.03	.050	.03	310	1.46	.000
JUN											
25...	9.4	22.1	73.0	9.4	112	--	--	--	--	--	--
25...	9.4	22.0	--	8.9	106	--	--	--	--	--	--
25...	9.3	21.6	--	7.7	91	.02	.040	.05	38000	15.3	.220
25...	9.2	21.3	--	3.3	39	--	--	--	--	--	--
AUG											
08...	7.2	20.6	43.2	7.0	77	--	--	--	--	--	--
08...	--	20.0	--	6.6	72	--	--	--	--	--	--
08...	7.4	19.3	--	6.1	66	.00	.070	.01	57000	21.0	1.05
SEP											
24...	8.4	12.9	28.8	7.1	68	--	--	--	--	--	--
24...	8.5	12.9	--	7.0	67	--	--	--	--	--	--
24...	8.6	12.8	--	6.7	64	.00	.050	.00	83000	72.4	.000
24...	8.6	12.7	--	5.8	55	--	--	--	--	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

HEART RIVER BASIN

06348880 - CROWN BUTTE LAKE (SHALLOW) NEAR MANDAN, ND

DATE	OCT 4,79	JAN 28,80	MAY 15,80	JUN 25,80	AUG 8,80	SEP 24,80
TIME	1254	1534	1324	1129	1224	1124
TOTAL CELLS/ML	910000	78000	310	38000	57000	83000
DIVERSITY: DIVISION	0.1	0.5	1.0	0.0	0.4	0.3
.CLASS	0.1	0.5	1.0	0.0	0.4	0.3
..ORDER	0.6	0.5	1.2	0.0	0.9	1.3
...FAMILY	0.6	0.6	1.3	0.0	1.4	1.7
....GENUS	0.6	0.7	1.3	0.3	1.4	1.9

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	*	0	--	-	--	-
...CHLOROCOCCACEAE												
....CHLOROCOCCUM	*	0	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	*	0	--	-	13	4	--	-	*	0	960	1
....CHLORELLA	*	0	68000#	88	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	980	1	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	340	1	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-	--	-	*	0
...SCENEDESMACEAE												
....SCENEDESMUS	--	-	980	1	--	-	--	-	*	0	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	39	13	--	-	*	0	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	*	0	7300	9	--	-	*	0	730	1	1900	2
....MELOSIRA	--	-	--	-	--	-	--	-	--	-	680	1
..PENNALES												
...FRAGILARIACEAE												
....ASTERIONELLA	*	0	490	1	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....NAVICULA	--	-	--	-	--	-	--	-	--	-	*	0
...NITZSCHIACEAE												
....NITZSCHIA	--	-	--	-	230#	75	--	-	1500	3	*	0
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	13	4	--	-	*	0	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	13	4	*	0	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	340	1	2200	3
....ANACYSTIS	800000#	89	--	-	--	-	*	0	6900	12	44000#	53
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	6400	1	--	-	--	-	1700	4	--	-	--	-
....APHANIZOMENON	--	-	--	-	--	-	36000#	95	41000#	71	14000#	16
...OSCILLATORIACEAE												
....OSCILLATORIA	89000	10	--	-	--	-	--	-	6000	11	19000#	23
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	*	0	--	-
....TRACHELOMONAS	*	0	--	-	--	-	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

APPLE CREEK BASIN

464908099445801 - LAKE ISABEL (DEEP) NEAR DAWSON, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)
FEB												
07...	1250	.0	9.4	--	-4.0	100	0	5.0	772	2.10	2770	9.2
07...	1252	1.6	--	--	--	--	--	--	--	--	2930	9.2
07...	1254	3.3	--	--	--	--	--	--	--	--	3000	9.2
07...	1256	6.6	--	--	--	--	--	--	--	--	3150	8.9
07...	1258	--	--	--	--	--	--	--	--	--	--	--
MAY												
08...	0930	.0	8.5	5.36	4.0	0	225	3.5	764	--	2490	8.5
08...	0932	1.6	--	--	--	--	--	--	--	--	2470	8.5
08...	0934	3.3	--	--	--	--	--	--	--	--	2470	8.5
08...	0936	6.6	--	--	--	--	--	--	--	--	2450	8.5
AUG												
11...	1205	.0	8.3	4.31	22.0	20	270	12	766	--	2640	6.1
11...	1207	1.6	--	--	--	--	--	--	--	--	2750	5.1
11...	1209	3.3	--	--	--	--	--	--	--	--	2740	5.3
11...	1211	6.6	--	--	--	--	--	--	--	--	2740	6.6
11...	1213	7.5	--	--	--	--	--	--	--	--	2740	--

DATE	TEMPERATURE, WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITROGEN, NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
FEB												
07...	.0	45.0	7.0	67	--	--	--	--	--	--	--	--
07...	.1	--	6.9	46	--	--	--	--	--	--	--	--
07...	.3	--	6.8	46	.14	--	--	.020	.01	--	4.10	.000
07...	1.7	--	2.6	18	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	8.6	5640	--	--	410	--	--
MAY												
08...	13.9	26.0	8.1	78	--	--	--	--	--	--	--	--
08...	13.9	--	8.1	78	--	--	--	--	--	--	--	--
08...	13.9	--	8.1	78	.00	--	--	.020	.07	--	5.77	.000
08...	13.8	--	8.2	79	--	--	--	--	--	--	--	--
AUG												
11...	20.5	20.4	9.0	101	--	--	--	--	--	--	--	--
11...	20.5	--	8.9	100	--	--	--	--	--	--	--	--
11...	20.4	--	8.8	99	.21	--	--	.040	.01	--	15.0	.000
11...	19.7	--	8.7	95	--	--	--	--	--	--	--	--
11...	19.7	--	8.5	92	--	--	--	--	--	--	--	--

464934099442001 - LAKE ISABEL (SHALLOW) NEAR DAWSON, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)
FEB											
07...	1610	.0	7.3	--	-6.0	100	0	15	772	2.10	2650
07...	1612	1.6	--	--	--	--	--	--	--	--	2770
07...	1614	3.3	--	--	--	--	--	--	--	--	2810
MAY											
08...	1045	.0	4.4	5.36	7.0	0	225	2.5	764	--	2480
08...	1047	1.6	--	--	--	--	--	--	--	--	2440
08...	1049	3.3	--	--	--	--	--	--	--	--	2430
AUG											
11...	1315	.0	5.0	4.31	23.0	20	225	10	765	--	2730
11...	1317	1.6	--	--	--	--	--	--	--	--	2780
11...	1319	3.3	--	--	--	--	--	--	--	--	2770

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

APPLE CREEK BASIN

464934099442001 - LAKE ISABEL (SHALLOW) NEAR DAWSON, ND

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB										
07...	9.0	.8	45.0	5.7	39	--	--	--	--	--
07...	9.0	1.3	--	5.7	40	--	--	--	--	--
07...	9.0	1.9	--	4.6	33	.20	.020	.01	7.56	.000
MAY										
08...	8.5	14.4	29.0	8.1	79	--	--	--	--	--
08...	8.5	14.4	--	8.1	79	--	--	--	--	--
08...	8.5	14.4	--	8.6	84	.02	.040	.07	7.03	.000
AUG										
11...	7.3	21.4	19.2	8.9	100	--	--	--	--	--
11...	7.5	21.3	--	8.8	100	--	--	--	--	--
11...	7.6	20.9	--	8.9	97	.14	.040	.00	25.0	.000

CANNONBALL RIVER BASIN

462027102374101 - LAKE IRIS (DEEP) NEAR REGENT, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG, FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
FEB											
11...	1405	.0	17	--	1.0	100	315	10	744	1.60	1300
11...	1407	1.6	--	--	--	--	--	--	--	--	1390
11...	1409	3.3	--	--	--	--	--	--	--	--	1410
11...	1411	6.6	--	--	--	--	--	--	--	--	1390
11...	1413	13	--	--	--	--	--	--	--	--	1390
11...	1415	16	--	--	--	--	--	--	--	--	1410
11...	1417	--	--	--	--	--	--	--	--	--	--
MAY											
12...	1230	.0	19	8.99	12.0	90	45	7.5	735	--	1360
12...	1232	1.6	--	--	--	--	--	--	--	--	1340
12...	1234	3.3	--	--	--	--	--	--	--	--	1338
12...	1236	6.6	--	--	--	--	--	--	--	--	1340
12...	1238	13	--	--	--	--	--	--	--	--	1330
12...	1240	19	--	--	--	--	--	--	--	--	1330
JUN											
24...	1240	.0	20	10.60	24.0	0	270	7.5	709	--	1160
24...	1242	1.6	--	--	--	--	--	--	--	--	1260
24...	1244	3.3	--	--	--	--	--	--	--	--	1280
24...	1246	6.6	--	--	--	--	--	--	--	--	1280
24...	1248	13	--	--	--	--	--	--	--	--	1290
24...	1250	19	--	--	--	--	--	--	--	--	1290
AUG											
05...	1145	.0	18	8.95	27.0	10	270	17	735	--	1440
05...	1147	1.6	--	--	--	--	--	--	--	--	1440
05...	1149	3.3	--	--	--	--	--	--	--	--	1450
05...	1151	6.6	--	--	--	--	--	--	--	--	1450
05...	1153	13	--	--	--	--	--	--	--	--	1450
05...	1155	16	--	--	--	--	--	--	--	--	1460
SEP											
23...	1300	.0	18	--	19.0	40	270	20	740	--	1380
23...	1302	1.6	--	--	--	--	--	--	--	--	1340
23...	1304	3.3	--	--	--	--	--	--	--	--	1560
23...	1306	6.6	--	--	--	--	--	--	--	--	1550
23...	1308	13	--	--	--	--	--	--	--	--	1550
23...	1310	17	--	--	--	--	--	--	--	--	1560

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)

CANNONBALL RIVER BASIN

462027102374101 - LAKE IRIS (DEEP) NEAR REGENT, ND

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)
FEB										
11...	8.4	1.5	62.0	13.4	98	--	--	--	--	--
11...	8.4	3.2	--	13.3	101	--	--	--	--	--
11...	8.1	4.0	--	12.6	98	.02	--	--	.020	.04
11...	8.2	3.9	--	9.7	76	--	--	--	--	--
11...	7.9	4.0	--	3.2	25	--	--	--	--	--
11...	7.8	4.1	--	2.3	18	--	--	--	--	--
11...	--	--	--	--	--	--	3.2	1130	--	--
MAY										
12...	8.4	13.1	44.0	8.1	79	--	--	--	--	--
12...	8.3	13.1	--	8.1	79	--	--	--	--	--
12...	8.4	13.0	--	8.0	78	.03	--	--	.030	.01
12...	8.3	13.1	--	8.0	78	--	--	--	--	--
12...	8.3	13.0	--	7.9	77	--	--	--	--	--
12...	8.3	12.8	--	7.2	70	--	--	--	--	--
JUN										
24...	8.5	21.5	95.0	5.9	71	--	--	--	--	--
24...	8.5	21.6	--	5.8	70	--	--	--	--	--
24...	8.5	21.6	--	5.8	70	.06	--	--	.080	.06
24...	8.5	21.4	--	5.6	68	--	--	--	--	--
24...	8.5	21.2	--	5.4	65	--	--	--	--	--
24...	8.5	21.2	--	5.4	65	--	--	--	--	--
AUG										
05...	7.4	17.5	56.4	7.4	80	--	--	--	--	--
05...	--	17.5	--	7.4	80	--	--	--	--	--
05...	7.4	17.4	--	7.4	79	.11	--	--	.100	.04
05...	--	17.4	--	7.3	78	--	--	--	--	--
05...	7.4	17.2	--	6.8	73	--	--	--	--	--
05...	7.4	17.1	--	6.7	72	--	--	--	--	--
SEP										
23...	8.6	13.0	67.2	9.2	89	--	--	--	--	--
23...	--	13.0	--	9.1	88	--	--	--	--	--
23...	8.7	13.0	--	9.0	87	.00	--	--	.080	.02
23...	8.8	12.9	--	8.9	86	--	--	--	--	--
23...	8.8	12.8	--	8.3	80	--	--	--	--	--
23...	8.8	12.7	--	8.0	77	--	--	--	--	--

DATE	PHOS-PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
FEB										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	0	2	200	390	0	0	0	1	20
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	550	--	--	--	--	--	--	--	--	--
MAY										
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
JUN										
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
AUG										
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

CANNONBALL RIVER BASIN

462027102374101 - LAKE IRIS (DEEP) NEAR REGENT, ND

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB										
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	0	10	.1	1	0	20	.00	1500	3.12	.000
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
MAY										
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	18000	13.1	.000
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
JUN										
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	13000	7.38	.000
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
AUG										
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	280000	28.0	.000
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
SEP										
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	130000	31.5	.000
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--

CANNONBALL RIVER BASIN

462027102374101 - LAKE IRIS (DEEP) NEAR REGENT, ND

DATE	FEB 11,80		MAY 12,80		JUN 24,80		AUG 5,80		SEP 23,80	
TIME	1409		1234		1244		1149		1304	
TOTAL CELLS/ML	1500		18000		13000		200000		130000	
DIVERSITY: DIVISION	1.5		1.5		0.2		0.0		0.0	
.CLASS	1.5		1.5		0.2		0.0		0.0	
..ORDER	1.6		1.7		0.2		0.0		0.0	
...FAMILY	1.7		2.1		0.2		0.0		0.0	
....GENUS	1.7		2.1		0.2		0.0		0.0	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	13	1	--	-	150	1	*	0	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	65	4	5000#	28	--	-	--	-	--	-
....CHLORELLA	26	2	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....SCENEDESMUS	--	-	1400	8	*	0	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	*	0	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	91	6	320	2	--	-	--	-	--	-
....MELOSIRA	--	-	320	2	--	-	--	-	--	-
..PENNALES										
...FRAGILARIACEAE										
....SYNEDRA	--	-	--	-	*	0	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	13	1	--	-	*	0	--	-	--	-
...TABELLARIACEAE										
....TABELLARIA	26	2	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	550	3	--	-	*	0	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	78	5	630	4	90	1	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	630	4	--	-	--	-	*	0
..HORMOGONALES										
...NOSTOCACEAE										
....APHANIZOMENON	--	-	--	-	13000#	98	200000#	100	130000#	100
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	8700#	49	--	-	--	-	--	-
....SCHIZOTHRIX	170	11	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	1000#	68	--	-	--	-	--	-	--	-
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	*	0	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

CANNONBALL RIVER BASIN

461941102373201 - LAKE IRIS (SHALLOW) NEAR REGENT, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)
FEB										
11...	1745	.0	12	--	-5.0	5	315	5.0	739	1.50
11...	1747	1.6	--	--	--	--	--	--	--	--
11...	1749	3.3	--	--	--	--	--	--	--	--
11...	1751	6.6	--	--	--	--	--	--	--	--
11...	1753	9.9	--	--	--	--	--	--	--	--
MAY										
12...	1400	.0	4.9	8.99	13.0	75	90	12	735	--
12...	1402	1.6	--	--	--	--	--	--	--	--
12...	1404	3.3	--	--	--	--	--	--	--	--
JUN										
24...	1400	.0	5.7	10.60	25.0	10	225	7.5	709	--
24...	1402	1.6	--	--	--	--	--	--	--	--
24...	1404	3.3	--	--	--	--	--	--	--	--
AUG										
05...	1300	.0	6.9	8.95	29.0	15	270	15	737	--
05...	1302	1.6	--	--	--	--	--	--	--	--
05...	1304	3.3	--	--	--	--	--	--	--	--
05...	1306	5.5	--	--	--	--	--	--	--	--
SEP										
23...	1430	.0	6.5	--	15.0	80	270	23	740	--
23...	1432	1.6	--	--	--	--	--	--	--	--
23...	1434	3.3	--	--	--	--	--	--	--	--

DATE	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)
FEB										
11...	1140	8.1	1.8	39.0	14.3	106	--	--	--	--
11...	1230	8.2	4.0	--	14.4	113	--	--	--	--
11...	1230	8.4	4.2	--	13.6	107	.04	.060	.07	0
11...	1200	8.1	3.8	--	12.6	99	--	--	--	--
11...	1200	8.0	3.8	--	11.1	87	--	--	--	--
MAY										
12...	1410	8.1	13.5	47.0	9.7	96	--	--	--	--
12...	1370	8.1	13.4	--	9.7	96	--	--	--	--
12...	1360	8.1	13.4	--	9.8	97	.03	.060	.01	--
JUN										
24...	1310	8.5	21.3	55.0	6.0	72	--	--	--	--
24...	1340	8.5	21.3	--	6.1	73	--	--	--	--
24...	1330	8.5	21.2	--	5.6	67	.05	.100	.08	--
AUG										
05...	1420	7.2	16.0	42.0	6.6	69	--	--	--	--
05...	1470	--	16.0	--	6.6	69	--	--	--	--
05...	1470	7.3	15.8	--	6.5	68	.26	.150	.10	--
05...	1470	7.2	15.4	--	4.7	49	--	--	--	--
SEP										
23...	1550	8.6	13.8	57.6	10.1	100	--	--	--	--
23...	1570	8.8	13.8	--	10.3	102	--	--	--	--
23...	1570	8.8	13.8	--	10.2	101	.00	.080	.04	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

CANNONBALL RIVER BASIN

461941102373201 - LAKE IRIS (SHALLOW) NEAR REGENT, ND

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
FEB									
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	2	90	380	<1	0	<3	0	20	0
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
MAY									
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
JUN									
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
AUG									
05...	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--
SEP									
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--

DATE	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
FEB									
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
11...	4	.1	<10	0	10	.00	9000	5.49	.000
11...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
MAY									
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	14000	6.88	.000
JUN									
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	3500	4.92	.490
AUG									
05...	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	130000	13.3	.000
05...	--	--	--	--	--	--	--	--	--
SEP									
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	430000	75.4	.000

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

CANNONBALL RIVER BASIN

461941102373201 - LAKE IRIS (SHALLOW) NEAR REGENT, ND

DATE	FEB 11,80		MAY 12,80		JUN 24,80		AUG 5,80		SEP 23,80	
TIME	1749		1404		1404		1304		1434	
TOTAL CELLS/ML	9000		14000		3500		130000		430000	
DIVERSITY: DIVISION	1.9		0.9		1.4		0.0		0.0	
.CLASS	1.9		0.9		1.4		0.0		0.0	
..ORDER	0.0		1.2		1.4		0.0		0.0	
...FAMILY	0.0		1.8		2.3		0.0		0.2	
....GENUS	0.0		1.9		3.0		0.0		0.2	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	--	-	130	4	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	350	4	7800#	55	26	1	*	0	--	-
....CHLORELLA	69	1	--	-	100	3	--	-	--	-
....SELENASTRUM	--	-	--	-	26	1	--	-	--	-
....TETRAEDRON	--	-	100	1	--	-	--	-	--	-
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	--	-	100	3	--	-	--	-
....SCENEDESMUS	--	-	2800#	20	52	1	*	0	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	400	3	*	0	*	0	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	830	9	200	1	*	0	*	0	*	0
..PENNALES										
...ACHNANTHACEAE										
....RHOICOSPHENIA	--	-	--	-	*	0	--	-	--	-
...FRAGILARIACEAE										
....SYNEDRA	--	-	100	1	--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	--	-	--	-	*	0	*	0	*	0
...NITZSCHIACEAE										
....NITZSCHIA	--	-	100	1	130	4	*	0	--	-
...TABELLARIACEAE										
....TABELLARIA	630	7	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE	420	5	--	-	--	-	--	-	--	-
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	4300#	48	100	1	310	9	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	100	1	--	-	--	-	*	0
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	390	11	--	-	--	-
....APHANIZOMENON	--	-	--	-	1300#	37	130000#	100	420000#	97
...OSCILLATORIACEAE										
....LYNGBYA	--	-	--	-	390	11	--	-	3400	1
....OSCILLATORIA	--	-	2400#	17	390	11	--	-	7600	2
....SCHIZOTHRIX	1200	13	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	90	3	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	1300	14	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

BEAVER CREEK BASIN

462249099362701 - BEAVER LAKE (DEEP) NEAR BURNSTAD, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)
FEB												
08...	1025	.0	7.4	--	--	30	90	5.0	765	2.10	1070	8.4
08...	1027	1.6	--	--	--	--	--	--	--	--	1140	8.2
08...	1029	3.3	--	--	--	--	--	--	--	--	1150	8.2
08...	1031	--	--	--	--	--	--	--	--	--	--	--
MAY												
07...	0925	.0	6.4	6.64	4.0	80	0	17	759	--	749	8.5
07...	0927	1.6	--	--	--	--	--	--	--	--	749	8.5
07...	0929	3.3	--	--	--	--	--	--	--	--	749	8.5
07...	0931	6.6	--	--	--	--	--	--	--	--	747	8.4
AUG												
12...	0915	.0	6.0	5.13	17.0	95	225	20	750	--	794	7.3
12...	0917	1.6	--	--	--	--	--	--	--	--	792	7.3
12...	0919	3.3	--	--	--	--	--	--	--	--	792	7.3
12...	0921	5.0	--	--	--	--	--	--	--	--	792	7.3

DATE	TEMPERATURE, WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITROGEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
FEB												
08...	.4	64.0	10.6	73	--	--	--	--	--	--	--	--
08...	2.0	--	9.7	70	--	--	--	--	--	--	--	--
08...	2.7	--	8.8	64	.05	--	--	.190	.14	--	1.98	.000
08...	--	--	--	--	--	4.8	1080	--	--	200	--	--
MAY												
07...	14.5	58.0	8.0	78	--	--	--	--	--	--	--	--
07...	14.5	--	7.9	77	--	--	--	--	--	--	--	--
07...	14.5	--	7.9	77	.02	--	--	.100	.08	--	3.91	.710
07...	14.5	--	7.6	74	--	--	--	--	--	--	--	--
AUG												
12...	19.7	31.2	5.6	62	--	--	--	--	--	--	--	--
12...	19.7	--	5.5	61	--	--	--	--	--	--	--	--
12...	19.7	--	5.4	59	.14	--	--	.410	.34	--	33.1	.000
12...	19.7	--	5.1	56	--	--	--	--	--	--	--	--

462355099360801 - BEAVER LAKE (SHALLOW) NEAR BURNSTAD, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)
FEB											
08...	1410	.0	7.1	--	-7.0	10	180	10	763	2.10	975
08...	1412	1.6	--	--	--	--	--	--	--	--	1040
08...	1414	3.3	--	--	--	--	--	--	--	--	1060
MAY											
07...	1035	.0	4.2	6.64	5.0	90	0	17	759	--	746
07...	1037	1.6	--	--	--	--	--	--	--	--	749
07...	1039	3.3	--	--	--	--	--	--	--	--	748
AUG											
12...	1245	.0	4.1	5.13	19.0	100	45	5.0	760	--	771
12...	1247	1.6	--	--	--	--	--	--	--	--	760
12...	1249	3.3	--	--	--	--	--	--	--	--	760

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
BEAVER CREEK BASIN										
462355099360801 - BEAVER LAKE (SHALLOW) NEAR BURNSTAD, ND										
FEB										
08...	8.2	.6	72.0	9.0	62	--	--	--	--	--
08...	8.2	2.1	--	9.8	71	--	--	--	--	--
08...	8.2	2.4	--	10.9	80	.08	.160	.12	.700	.000
MAY										
07...	8.5	14.3	50.0	7.5	73	--	--	--	--	--
07...	8.5	14.3	--	7.7	75	--	--	--	--	--
07...	8.5	14.3	--	7.7	75	.02	.110	.09	1.81	.000
AUG										
12...	7.9	19.6	44.4	9.1	99	--	--	--	--	--
12...	7.7	19.6	--	9.1	99	--	--	--	--	--
12...	7.9	19.6	--	8.3	90	.05	.310	.24	1.62	.000

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)
SPRING CREEK BASIN												
460228099270001 - LAKE HOSKINS (DEEP) NEAR ASHLEY, ND												
FEB												
05...	1045	.0	8.3	11.19	-4.0	100	315	5.0	759	1.90	1210	8.2
05...	1047	1.6	--	--	--	--	--	--	--	--	1240	8.1
05...	1049	3.3	--	--	--	--	--	--	--	--	1240	8.1
05...	1051	--	--	--	--	--	--	--	--	--	--	--
MAY												
06...	0915	.0	7.2	10.10	15.0	25	90	7.5	753	--	929	8.6
06...	0917	1.6	--	--	--	--	--	--	--	--	845	8.6
06...	0919	3.3	--	--	--	--	--	--	--	--	837	8.5
06...	0921	6.6	--	--	--	--	--	--	--	--	834	5.5
AUG												
13...	0910	.0	6.4	9.91	16.0	10	315	3.0	750	--	1100	--
13...	0912	1.6	--	--	--	--	--	--	--	--	1050	7.3
13...	0914	3.3	--	--	--	--	--	--	--	--	1040	7.6
13...	0916	6.0	--	--	--	--	--	--	--	--	1040	7.6

DATE	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB												
05...	1.6	9.6	12.5	88	--	--	--	--	--	--	--	--
05...	1.9	--	11.2	81	--	--	--	--	--	--	--	--
05...	2.2	--	10.2	74	.68	--	--	.970	1.6	--	43.1	.000
05...	--	--	--	--	--	5.0	1010	--	--	750	--	--
MAY												
06...	17.0	11.0	7.1	73	--	--	--	--	--	--	--	--
06...	17.0	--	7.0	73	--	--	--	--	--	--	--	--
06...	17.0	--	6.7	70	.25	--	--	.740	.44	--	3.70	.000
06...	16.8	--	6.8	71	--	--	--	--	--	--	--	--
AUG												
13...	19.4	8.4	7.1	78	--	--	--	--	--	--	--	--
13...	19.4	--	7.0	77	--	--	--	--	--	--	--	--
13...	19.8	--	6.8	74	.23	--	--	2.600	1.2	--	13.5	.000
13...	19.4	--	6.7	73	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

SPRING CREEK BASIN

460228099274701 - LAKE HOSKINS (SHALLOW) NEAR ASHLEY, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
FEB											
05...	1425	.0	7.2	11.19	-3.0	100	315	5.0	759	1.90	1200
05...	1427	1.6	--	--	--	--	--	--	--	--	1210
05...	1429	3.3	--	--	--	--	--	--	--	--	1220
MAY											
06...	1120	.0	5.1	10.10	15.0	35	90	7.5	753	--	921
06...	1122	1.6	--	--	--	--	--	--	--	--	861
06...	1124	3.3	--	--	--	--	--	--	--	--	850
AUG											
13...	1155	.0	4.2	9.91	19.0	45	315	5.0	755	--	970
13...	1157	1.6	--	--	--	--	--	--	--	--	1010
13...	1159	3.3	--	--	--	--	--	--	--	--	1020

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB										
05...	8.4	1.6	10.0	13.2	94	--	--	--	--	--
05...	8.2	2.1	--	10.3	75	--	--	--	--	--
05...	8.1	2.6	--	9.2	68	.63	.920	1.4	44.9	.000
MAY										
06...	8.4	18.0	8.0	7.8	83	--	--	--	--	--
06...	8.3	16.9	--	7.2	75	--	--	--	--	--
06...	8.1	15.6	--	5.3	54	.19	.710	.43	3.74	.000
AUG										
13...	6.9	19.8	10.8	7.2	79	--	--	--	--	--
13...	6.9	19.7	--	7.2	79	--	--	--	--	--
13...	7.2	19.3	--	7.1	77	.15	2.700	.89	15.3	.000

460204100045101 - RICE LAKE (DEEP) NEAR HULL, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)
FEB								
22...	1145	.0	5.0	--	-4.0	80	315	10
22...	1147	1.6	--	--	--	--	--	--
22...	1149	3.3	--	--	--	--	--	--
22...	1151	--	--	--	--	--	--	--
MAY								
05...	1140	.0	4.6	3.06	25.0	0	45	7.5
05...	1142	1.6	--	--	--	--	--	--
05...	1144	3.3	--	--	--	--	--	--
AUG								
14...	1030	.0	3.4	0.73	21.0	15	0	.0
14...	1032	1.6	--	--	--	--	--	--
14...	1034	3.0	--	--	--	--	--	--

DATE	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
FEB									
22...	757	1.80	1413	8.4	2.2	20.0	--	--	--
22...	--	--	1490	8.2	3.9	--	3.6	30	--
22...	--	--	1519	8.2	4.4	--	--	--	.04
22...	--	--	--	--	--	--	--	--	--
MAY									
05...	760	--	1070	8.7	18.5	20.0	7.0	74	--
05...	--	--	1060	8.7	18.5	--	6.8	72	--
05...	--	--	1060	8.7	18.2	--	6.3	66	.01
AUG									
14...	762	--	1270	7.3	20.6	2.4	8.2	92	--
14...	--	--	1260	7.4	20.0	--	7.0	77	--
14...	--	--	1260	7.2	19.5	--	6.5	71	.23

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

SPRING CREEK BASIN

460204100045101 - RICE LAKE (DEEP) NEAR HULL, ND

DATE	NITRO-GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO-GEN,NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB								
22...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
22...	--	--	3.300	2.7	--	--	25.0	.050
22...	13	5290	--	--	1200	--	--	--
MAY								
05...	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--
05...	--	--	2.400	1.9	--	--	44.8	2.97
AUG								
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	--	--	.810	.30	--	1100000	345	14.6

460322100040401 - RICE LAKE (SHALLOW) NEAR HULL, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	TEMPER-ATURE, AIR (DEG C) (00020)	CLOUD COVER (PER-CENT) (00032)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)
FEB											
22...	1410	.0	4.0	--	-3.5	100	315	10	757	1.90	1295
22...	1412	1.6	--	--	--	--	--	--	--	--	1355
MAY											
05...	1240	.0	3.1	3.06	25.0	0	45	10	760	--	1070
05...	1242	1.6	--	--	--	--	--	--	--	--	1070
AUG											
14...	1125	.0	2.7	0.73	20.0	30	0	.0	765	--	1260
14...	1127	1.6	--	--	--	--	--	--	--	--	1270

DATE	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
FEB											
22...	8.7	1.2	38.0	--	--	--	--	--	--	--	--
22...	8.8	2.4	--	--	--	.10	3.600	2.6	--	5.27	.000
MAY											
05...	8.8	19.8	17.0	8.0	87	--	--	--	--	--	--
05...	8.8	19.8	--	8.0	87	.19	2.300	1.8	--	29.9	.000
AUG											
14...	7.7	20.3	2.4	9.6	104	--	--	--	--	--	--
14...	7.2	19.4	--	6.7	72	.28	.700	.28	520000	401	29.1

ANALYSIS OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

GRAND RIVER BASIN

460855103282801 - KALINA RESERVOIR (DEEP) NEAR BOWMAN, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)
FEB								
12...	0955	.0	12	--	--	90	315	15
12...	0957	1.6	--	--	--	--	--	--
12...	0959	3.3	--	--	--	--	--	--
12...	1001	6.6	--	--	--	--	--	--
12...	1003	13	--	--	--	--	--	--
12...	1005	--	--	--	--	--	--	--
MAY								
13...	1030	.0	13	4.82	10.0	20	90	2.5
13...	1032	1.6	--	--	--	--	--	--
13...	1034	3.3	--	--	--	--	--	--
13...	1036	6.6	--	--	--	--	--	--
13...	1038	9.9	--	--	--	--	--	--
AUG								
06...	0915	.0	11	1.47	23.0	10	225	12
06...	0917	1.6	--	--	--	--	--	--
06...	0919	3.3	--	--	--	--	--	--
06...	0921	6.6	--	--	--	--	--	--
06...	0923	9.9	--	--	--	--	--	--

DATE	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (82130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
FEB									
12...	721	1.60	1000	8.6	1.3	39.0	16.3	123	--
12...	--	--	1110	8.6	3.6	--	15.2	121	--
12...	--	--	1144	8.6	4.2	--	14.8	119	.13
12...	--	--	1150	8.4	4.5	--	11.1	90	--
12...	--	--	1180	7.4	4.7	--	8.4	68	--
12...	--	--	--	--	--	--	--	--	--
MAY									
13...	729	--	996	8.4	13.3	20.0	8.3	82	--
13...	--	--	993	8.4	13.1	--	8.6	85	--
13...	--	--	991	8.4	13.0	--	8.[illegible]	83	.03
13...	--	--	990	8.4	12.9	--	8.4	83	--
13...	--	--	989	8.4	12.8	--	8.1	81	--
AUG									
06...	722	--	1020	7.5	16.3	12.0	9.5	102	--
06...	--	--	1080	7.5	16.3	--	9.3	100	--
06...	--	--	1080	7.5	16.3	--	9.3	100	.00
06...	--	--	1080	7.5	16.3	--	9.2	99	--
06...	--	--	1089	7.5	15.8	--	7.3	77	--

DATE	NITROGEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITROGEN, NH4 + ORG. TOT IN BOT MAT (MG/KG AS N) (00626)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
FEB								
12...	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--
12...	--	--	.020	.03	--	--	8.64	.000
12...	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--
12...	.0	2940	--	--	480	--	--	--
MAY								
13...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
13...	--	--	.040	.01	--	--	12.2	1.49
13...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
AUG								
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	--	--	.100	.01	--	420000	--	--
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

GRAND RIVER BASIN

460855103282801 - KALINA RESERVOIR (DEEP) NEAR BOWMAN, ND

```
DATE                                     AUG  6,80
TIME                                         0919

TOTAL CELLS/ML                             420000

DIVERSITY: DIVISION                           0.2
          .CLASS                              0.2
          ..ORDER                             0.2
          ...FAMILY                           0.2
          ....GENUS                           0.2

                                        CELLS  PER-
 ORGANISM                                /ML   CENT

CHLOROPHYTA (GREEN ALGAE)
.CHLOROPHYCEAE
..CHLOROCOCCALES
...COELASTRACEAE
....COELASTRUM                           2200    1
...OOCYSTACEAE
....OOCYSTIS                                *    0
...SCENEDESMACEAE
....CRUCIGENIA                           2800    1
..VOLVOCALES
...CHLAMYDOMONADACEAE
....CHLAMYDOMONAS                           *    0
..ZYGNEMATALES
...DESMIDIACEAE
....STAURASTRUM                          2100    1

CHRYSOPHYTA
.BACILLARIOPHYCEAE
..CENTRALES
...COSCINODISCACEAE
....CYCLOTELLA                              *    0
....MELOSIRA                                *    0

CYANOPHYTA (BLUE-GREEN ALGAE)
.CYANOPHYCEAE
..HORMOGONALES
...OSCILLATORIACEAE
....OSCILLATORIA                       410000# 98

EUGLENOPHYTA (EUGLENOIDS)
.EUGLENOPHYCEAE
..EUGLENALES
...EUGLENACEAE
....EUGLENA                                 *    0
....TRACHELOMONAS                           *    0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
      * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%
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CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

GRAND RIVER BASIN

460855103285601 - KALINA RESERVOIR (SHALLOW) NEAR BOWMAN, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG, FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS (FEET) (02130)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)
FEB											
12...	1305	.0	4.2	--	--	100	315	10	721	1.70	966
12...	1307	1.6	--	--	--	--	--	--	--	--	1030
MAY											
13...	1130	.0	4.1	4.82	11.0	35	45	12	729	--	1010
13...	1132	1.6	--	--	--	--	--	--	--	--	1000
13...	1134	3.3	--	--	--	--	--	--	--	--	995
AUG											
06...	1020	.0	4.0	1.87	25.0	10	270	12	723	--	1080
06...	1022	1.6	--	--	--	--	--	--	--	--	1090
06...	1024	3.3	--	--	--	--	--	--	--	--	1100

DATE	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
FEB											
12...	8.3	1.8	32.0	16.6	124	--	--	--	--	--	--
12...	8.3	3.6	--	15.6	124	.03	.010	.00	--	9.46	.000
MAY											
13...	8.4	12.8	16.0	9.2	90	--	--	--	--	--	--
13...	8.4	12.7	--	9.1	89	--	--	--	--	--	--
13...	8.4	12.7	--	9.1	89	.03	.030	.01	--	12.8	1.46
AUG											
06...	7.3	17.8	6.0	10.3	114	--	--	--	--	--	--
06...	7.3	17.7	--	10.2	112	--	--	--	--	--	--
06...	7.3	17.7	--	10.1	111	.00	.110	.02	380000	36.0	2.24

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO AUGUST 1980

GRAND RIVER BASIN

460855103285601 - KALINA RESERVOIR (SHALLOW) NEAR BOWMAN, ND

DATE	AUG 6,80
TIME	1024
TOTAL CELLS/ML	380000
DIVERSITY: DIVISION	0.2
.CLASS	0.2
..ORDER	0.3
...FAMILY	0.3
....GENUS	0.3

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...OOCYSTACEAE		
....OOCYSTIS	*	0
...SCENEDESMACEAE		
....CRUCIGENIA	7000	2
....SCENEDESMUS	*	0
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	*	0
..ZYGNEMATALES		
...DESMIDIACEAE		
....STAURASTRUM	2800	1
CHRYSOPHYTA		
.BACILLARIOPHYCEAE		
..CENTRALES		
...COSCINODISCACEAE		
....STEPHANODISCUS	*	0
..PENNALES		
...NITZSCHIACEAE		
....NITZSCHIA	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROOCOCCALES		
...CHROOCOCCACEAE		
....ANACYSTIS	4600	1
..HORMOGONALES		
...OSCILLATORIACEAE		
....OSCILLATORIA	370000#	96
EUGLENOPHYTA (EUGLENOIDS)		
.EUGLENOPHYCEAE		
..EUGLENALES		
...EUGLENACEAE		
....TRACHELOMONAS	*	0
PYRRHOPHYTA (FIRE ALGAE)		
.DINOPHYCEAE		
..PERIDINIALES		
...GLENODINIACEAE		
....GLENODINIUM	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

MISSOURI RIVER MAIN STEM

06332510 LAKE SAKAKAWEA NEAR NEW TOWN, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	RESERVOIR DEPTH (FEET) (72025)	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)
OCT										
10...	0850	.0	--	78	1800.00	44.20	16.0	90	225	15
10...	0852	1.6	--	--	1800.00	--	--	--	--	--
10...	0854	3.3	--	--	1800.00	--	--	--	--	--
10...	0856	6.6	--	--	1800.00	--	--	--	--	--
10...	0900	16.5	--	--	1800.00	--	--	--	--	--
10...	0902	33.0	--	--	1800.00	--	--	--	--	--
10...	0904	66.0	--	--	1800.00	--	--	--	--	--
10...	0906	75.0	--	--	1800.00	--	--	--	--	--
FEB										
01...	0945	.0	--	65	1800.00	40.50	-7.0	100	135	15
01...	0947	1.6	--	--	1800.00	--	--	--	--	--
01...	0949	6.6	--	--	1800.00	--	--	--	--	--
01...	0951	16.4	--	--	1800.00	--	--	--	--	--
01...	0953	32.8	--	--	1800.00	--	--	--	--	--
01...	0955	59.4	--	--	1800.00	--	--	--	--	--
APR										
30...	0920	.0	--	72	1800.00	37.10	20.5	20	90	5.0
30...	0922	1.6	--	--	1800.00	--	--	--	--	--
30...	0924	3.3	--	--	1800.00	--	--	--	--	--
30...	0926	6.6	--	--	1800.00	--	--	--	--	--
30...	0928	16.5	--	--	1800.00	--	--	--	--	--
30...	0930	33.0	--	--	1800.00	--	--	--	--	--
30...	0932	66.0	--	--	1800.00	--	--	--	--	--
JUN										
03...	1020	.0	--	72	1800.00	37.50	24.0	25	135	20
03...	1022	1.6	--	--	1800.00	--	--	--	--	--
03...	1024	3.3	--	--	1800.00	--	--	--	--	--
03...	1026	6.6	--	--	1800.00	--	--	--	--	--
03...	1028	16.5	--	--	1800.00	--	--	--	--	--
03...	1030	33.0	--	--	1800.00	--	--	--	--	--
03...	1032	66.0	--	--	1800.00	--	--	--	--	--
03...	1040	--	80020	--	1800.00	--	--	--	--	--
JUL										
02...	0957	.0	--	72	1800.00	39.83	22.0	20	--	.0
02...	0959	1.6	--	--	1800.00	--	--	--	--	--
02...	1001	3.3	--	--	1800.00	--	--	--	--	--
02...	1002	6.6	--	--	1800.00	--	--	--	--	--
02...	1004	16.5	--	--	1800.00	--	--	--	--	--
02...	1006	33.0	--	--	1800.00	--	--	--	--	--
02...	1008	66.0	--	--	1800.00	--	--	--	--	--

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
JUL								
29...	1735	.0	70	1800.00	39.40	30.5	100	--
29...	1737	1.6	--	1800.00	--	--	--	--
29...	1739	3.3	--	1800.00	--	--	--	--
29...	1741	6.6	--	1800.00	--	--	--	--
29...	1743	16.5	--	1800.00	--	--	--	--
29...	1745	33.0	--	1800.00	--	--	--	--
29...	1747	66.0	--	1800.00	--	--	--	--
SEP								
29...	1810	.0	68	1800.00	38.20	22.0	40	225
29...	1812	1.6	--	1800.00	--	--	--	--
29...	1814	3.3	--	1800.00	--	--	--	--
29...	1816	6.6	--	1800.00	--	--	--	--
29...	1818	16.5	--	1800.00	--	--	--	--
29...	1820	33.0	--	1800.00	--	--	--	--
29...	1822	66.0	--	1800.00	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)

MISSOURI RIVER MAIN STEM

06332510 LAKE SAKAKAWEA NEAR NEW TOWN, ND

DATE	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (82130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
OCT									
10...	701	--	664	8.1	13.5	36.0	9.4	98	--
10...	--	--	668	8.2	13.5	--	9.4	98	--
10...	--	--	666	8.3	13.5	--	9.5	99	--
10...	--	--	666	8.3	13.5	--	9.5	99	--
10...	--	--	664	8.4	13.6	--	9.5	99	--
10...	--	--	663	8.4	13.6	--	9.6	100	--
10...	--	--	662	8.4	13.6	--	9.6	100	--
10...	--	--	660	8.4	13.4	--	9.5	99	--
FEB									
01...	762	1.60	864	8.5	.3	174	13.1	91	--
01...	--	--	862	8.5	.4	--	13.1	91	--
01...	--	--	869	8.5	.7	--	13.3	93	--
01...	--	--	866	8.5	.8	--	13.4	94	--
01...	--	--	869	8.4	.9	--	12.7	89	--
01...	--	--	881	8.4	1.1	--	12.5	88	--
APR									
30...	757	--	684	8.6	4.5	70.0	14.2	110	--
30...	--	--	756	8.6	4.4	--	14.5	112	--
30...	--	--	749	8.6	4.4	--	14.6	112	--
30...	--	--	763	8.6	4.3	--	14.8	114	--
30...	--	--	768	8.6	3.9	--	14.8	113	--
30...	--	--	774	8.6	3.8	--	14.7	112	--
30...	--	--	795	8.4	3.2	--	12.4	93	--
JUN									
03...	754	--	770	8.6	13.6	42.0	9.0	87	--
03...	--	--	770	8.6	13.6	--	9.0	87	--
03...	--	--	770	8.6	13.6	--	9.0	87	--
03...	--	--	770	8.6	13.6	--	9.0	87	--
03...	--	--	768	8.5	13.5	--	9.1	88	--
03...	--	--	768	8.5	12.5	--	8.8	86	--
03...	--	--	766	8.4	11.2	--	8.2	75	--
03...	--	--	--	--	--	--	--	--	.1
JUL									
02...	757	--	556	7.3	19.5	25.0	7.5	82	--
02...	--	--	565	7.6	19.4	--	7.5	82	--
02...	--	--	568	7.8	19.3	--	7.5	81	--
02...	--	--	568	8.0	19.2	--	7.4	80	--
02...	--	--	575	8.0	19.0	--	7.2	78	--
02...	--	--	603	8.1	18.0	--	6.9	73	--
02...	--	--	721	8.0	14.7	--	4.2	42	--

DATE	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
JUL								
29...	.0	750	485	7.8	20.6	61.0	7.5	84
29...	--	--	581	7.9	20.5	--	7.5	84
29...	--	--	535	8.0	20.4	--	7.5	84
29...	--	--	538	8.1	20.3	--	7.4	82
29...	--	--	545	8.2	20.0	--	7.0	78
29...	--	--	580	8.2	18.8	--	6.1	66
29...	--	--	739	8.1	13.8	--	4.5	44
SEP								
29...	10	758	716	8.1	14.6	39.6	7.9	76
29...	--	--	728	8.2	14.5	--	7.9	76
29...	--	--	726	8.2	14.5	--	7.8	75
29...	--	--	727	8.3	14.4	--	7.8	75
29...	--	--	725	8.3	14.3	--	7.7	74
29...	--	--	726	8.3	14.0	--	7.4	70
29...	--	--	740	8.3	13.9	--	7.3	69

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

MISSOURI RIVER MAIN STEM

06337995 LAKE SAKAKAWEA AT RIVERDALE, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	RESERVOIR DEPTH (FEET) (72025)	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
JUN									
02...	1208	145	--	--	1800.00	--	--	--	--
02...	1235	--	80020	--	1800.00	--	--	--	--
JUL									
01...	1107	.0	--	165	1800.00	39.80	20.0	20	315
01...	1109	1.6	--	--	1800.00	--	--	--	--
01...	1111	3.3	--	--	1800.00	--	--	--	--
01...	1113	6.6	--	--	1800.00	--	--	--	--
01...	1115	16.5	--	--	1800.00	--	--	--	--
01...	1117	33.0	--	--	1800.00	--	--	--	--
01...	1119	66.0	--	--	1800.00	--	--	--	--
01...	1121	99.0	--	--	1800.00	--	--	--	--
01...	1123	132	--	--	1800.00	--	--	--	--
01...	1125	150	--	--	1800.00	--	--	--	--
30...	1040	.0	--	160	1800.00	39.90	21.5	0	315
30...	1042	1.6	--	--	1800.00	--	--	--	--
30...	1044	3.3	--	--	1800.00	--	--	--	--
30...	1046	6.6	--	--	1800.00	--	--	--	--
30...	1048	16.5	--	--	1800.00	--	--	--	--
30...	1050	33.0	--	--	1800.00	--	--	--	--
30...	1052	66.0	--	--	1800.00	--	--	--	--
30...	1054	99.0	--	--	1800.00	--	--	--	--
30...	1056	132	--	--	1800.00	--	--	--	--
30...	1058	150	--	--	1800.00	--	--	--	--
SEP									
30...	1030	.0	--	160	1800.00	38.20	18.0	95	225
30...	1032	1.6	--	--	1800.00	--	--	--	--
30...	1034	3.3	--	--	1800.00	--	--	--	--
30...	1036	6.6	--	--	1800.00	--	--	--	--
30...	1038	16.5	--	--	1800.00	--	--	--	--
30...	1040	33.0	--	--	1800.00	--	--	--	--
30...	1042	66.0	--	--	1800.00	--	--	--	--
30...	1044	99.0	--	--	1800.00	--	--	--	--
30...	1046	132	--	--	1800.00	--	--	--	--
30...	1048	150	--	--	1800.00	--	--	--	--

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	ELEV. OF LAND SURFACE DATUM (FT. NGVD) (72000)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)
OCT									
11...	0830	.0	167	1800.00	44.20	15.0	70	315	20
11...	0832	1.6	--	1800.00	--	--	--	--	--
11...	0834	6.6	--	1800.00	--	--	--	--	--
11...	0836	16.5	--	1800.00	--	--	--	--	--
11...	0838	33.0	--	1800.00	--	--	--	--	--
11...	0840	66.0	--	1800.00	--	--	--	--	--
11...	0842	99.0	--	1800.00	--	--	--	--	--
11...	0844	132	--	1800.00	--	--	--	--	--
11...	0846	165	--	1800.00	--	--	--	--	--
JAN									
31...	1200	.0	163	1800.00	40.50	-11.0	10	135	5.0
31...	1202	1.6	--	1800.00	--	--	--	--	--
31...	1204	6.6	--	1800.00	--	--	--	--	--
31...	1206	16.4	--	1800.00	--	--	--	--	--
31...	1208	32.8	--	1800.00	--	--	--	--	--
31...	1210	66.0	--	1800.00	--	--	--	--	--
31...	1212	99.0	--	1800.00	--	--	--	--	--
31...	1214	132	--	1800.00	--	--	--	--	--
31...	1216	158	--	1800.00	--	--	--	--	--
APR									
29...	1125	.0	165	1800.00	37.10	24.0	0	135	10
29...	1127	1.6	--	1800.00	--	--	--	--	--
29...	1129	3.3	--	1800.00	--	--	--	--	--
29...	1131	6.6	--	1800.00	--	--	--	--	--
29...	1133	16.5	--	1800.00	--	--	--	--	--
29...	1135	33.0	--	1800.00	--	--	--	--	--
29...	1137	66.0	--	1800.00	--	--	--	--	--
29...	1139	99.0	--	1800.00	--	--	--	--	--
29...	1141	132	--	1800.00	--	--	--	--	--
29...	1143	145	--	1800.00	--	--	--	--	--
JUN									
02...	1150	.0	160	1800.00	37.60	23.5	20	45	10
02...	1152	1.6	--	1800.00	--	--	--	--	--
02...	1154	3.3	--	1800.00	--	--	--	--	--
02...	1156	6.6	--	1800.00	--	--	--	--	--
02...	1158	16.5	--	1800.00	--	--	--	--	--
02...	1200	33.0	--	1800.00	--	--	--	--	--
02...	1202	66.0	--	1800.00	--	--	--	--	--
02...	1204	99.0	--	1800.00	--	--	--	--	--
02...	1206	132	--	1800.00	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD WATER-QUALITY LAKE STATIONS

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

MISSOURI RIVER MAIN STEM

06337995 LAKE SAKAKAWEA AT RIVERDALE, ND

DATE	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS (FEET) (02130)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
OCT								
11...	703	--	674	8.0	14.2	92.4	9.6	100
11...	--	--	673	8.1	14.2	--	9.3	97
11...	--	--	672	8.2	14.2	--	9.1	95
11...	--	--	671	8.3	14.2	--	9.1	95
11...	--	--	671	8.3	14.2	--	8.8	92
11...	--	--	668	8.4	14.2	--	8.8	92
11...	--	--	668	8.5	14.2	--	8.8	92
11...	--	--	664	8.5	14.1	--	8.8	9
11...	--	--	648	7.7	9.3	--	.9	0
JAN								
31...	769	1.50	572	8.6	.0	204	12.2	82
31...	--	--	573	8.6	.0	--	12.1	82
31...	--	--	574	8.6	.1	--	12.0	81
31...	--	--	575	8.6	.1	--	11.9	80
31...	--	--	576	8.6	.2	--	11.9	80
31...	--	--	584	8.6	.7	--	11.6	79
31...	--	--	590	8.6	1.1	--	11.6	81
31...	--	--	594	8.6	1.8	--	11.2	80
31...	--	--	592	8.5	2.4	--	10.6	77
APR								
29...	754	--	674	8.4	4.2	308	11.4	89
29...	--	--	682	8.4	4.1	--	11.6	90
29...	--	--	692	8.4	3.7	--	11.8	90
29...	--	--	695	8.4	3.5	--	12.2	93
29...	--	--	705	8.5	3.4	--	12.7	97
29...	--	--	712	8.5	3.4	--	12.4	94
29...	--	--	725	8.4	2.9	--	10.8	81
29...	--	--	788	8.3	1.8	--	9.0	66
29...	--	--	814	8.2	2.0	--	8.2	60
29...	--	--	835	8.1	2.3	--	7.2	53
JUN								
02...	750	--	826	8.4	8.1	157	11.0	94
02...	--	--	824	8.4	8.1	--	11.0	94
02...	--	--	822	8.4	8.1	--	11.0	94
02...	--	--	819	8.4	8.0	--	10.9	93
02...	--	--	818	8.4	7.6	--	10.9	92
02...	--	--	822	8.4	6.3	--	10.9	90
02...	--	--	829	8.4	5.5	--	10.9	88
02...	--	--	833	8.4	5.0	--	10.8	86
02...	--	--	836	8.4	4.6	--	10.7	84

DATE	WIND VELOC-ITY (MILES PER HOUR) (00035)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
JUN									
02...	--	--	838	8.4	4.5	--	10.6	83	--
02...	--	--	--	--	--	--	--	--	.1
JUL									
01...	5.0	759	692	7.9	17.6	58.0	8.0	96	--
01...	--	--	752	8.2	16.7	--	8.0	94	--
01...	--	--	756	8.3	16.4	--	8.2	96	--
01...	--	--	766	8.4	16.1	--	8.2	96	--
01...	--	--	762	8.4	15.9	--	7.9	91	--
01...	--	--	762	8.4	15.5	--	7.9	91	--
01...	--	--	760	8.4	15.0	--	7.9	90	--
01...	--	--	748	8.4	10.6	--	8.1	83	--
01...	--	--	740	8.4	7.1	--	8.4	80	--
01...	--	--	753	8.3	6.7	--	8.4	79	--
30...	12	761	774	7.6	19.2	180	8.2	88	--
30...	--	--	774	7.8	19.2	--	8.1	87	--
30...	--	--	774	8.0	19.2	--	8.1	87	--
30...	--	--	773	8.1	19.1	--	8.1	88	--
30...	--	--	773	8.3	19.1	--	8.0	86	--
30...	--	--	773	8.4	18.9	--	8.0	85	--
30...	--	--	772	8.4	18.3	--	7.7	81	--
30...	--	--	775	8.3	11.2	--	7.9	72	--
30...	--	--	777	8.3	9.4	--	8.0	70	--
30...	--	--	777	8.2	8.8	--	7.5	64	--
SEP									
30...	10	760	752	7.9	15.4	158	8.4	84	--
30...	--	--	764	--	15.4	--	8.5	85	--
30...	--	--	764	8.4	15.4	--	8.5	85	--
30...	--	--	763	8.5	15.4	--	8.5	85	--
30...	--	--	764	8.6	15.3	--	8.2	81	--
30...	--	--	764	8.6	15.3	--	8.2	81	--
30...	--	--	764	8.7	15.3	--	8.1	80	--
30...	--	--	762	8.7	15.1	--	7.9	78	--
30...	--	--	762	8.7	14.5	--	7.6	74	--
30...	--	--	758	8.6	13.6	--	5.3	51	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

TURTLE RIVER BASIN

475741097352500 - NORTH BRANCH TURTLE RIVER NEAR LARIMORE, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
MAR											
29...	1210	5.6	525	7.7	.0	K18	1200	240	61	65	19
APR											
01...	0900	14	425	7.8	.0	K20	K2200	190	48	49	16
03...	1230	81	490	8.0	.5	K25	930	210	68	52	19
07...	0850	43	470	7.8	.0	K28	230	190	67	50	15
10...	0850	24	600	8.1	3.0	K9	150	260	98	67	22
13...	1020	13	660	8.2	3.5	K11	66	300	110	79	25
JUN											
11...	1045	2.9	732	8.1	18.5	200	170	340	82	86	31
AUG											
26...	1025	3.2	662	8.1	17.0	83	300	310	61	80	27

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAR											
29...	16	12	.4	23	7.7	180	89	7.7	.2	20	340
APR											
01...	13	12	.4	23	9.5	140	69	7.8	.2	17	287
03...	22	18	.7	32	9.9	140	110	13	.1	16	327
07...	22	20	.7	30	8.4	120	110	12	.2	15	322
10...	31	20	.8	40	8.9	160	130	16	.2	.1	420
13...	31	18	.8	39	8.3	190	140	14	.2	.1	458
JUN											
11...	29	15	.7	34	5.0	260	110	11	.3	23	478
AUG											
26...	25	14	.6	28	4.5	250	100	10	.3	28	424

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR											
29...	337	.46	5.14	.61	.32	.98	110	80	190	14	.21
APR											
01...	268	.39	10.8	.51	.30	.92	60	100	330	13	.49
03...	329	.44	71.5	.47	.24	.74	100	140	480	44	9.6
07...	308	.44	37.4	.63	.19	.58	160	90	400	22	2.6
10...	373	.57	27.2	.29	.17	.52	90	80	250	8	.52
13...	413	.62	16.1	.09	.12	.37	80	80	270	5	.18
JUN											
11...	452	.65	3.74	.03	.13	.40	90	<10	150	10	.08
AUG											
26...	423	.58	3.66	.00	.07	.21	60	30	90	24	.21

475549097373000 - SOUTH BRANCH TURTLE RIVER NEAR LARIMORE, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JUN							
11...	1020	1.9	618	7.9	18.0	180	296

K - Results based on colony count outside the acceptable range (non-ideal colony count).

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

TURTLE RIVER BASIN

475614097345000 - TURTLE RIVER NEAR LARIMORE, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
MAR											
29...	1530	17	580	7.9	3.0	K10	1500	300	77	81	23
APR											
01...	1200	50	510	7.9	1.5	K10	2000	260	64	71	21
03...	1600	105	490	7.9	1.0	K5	560	220	71	57	19
07...	1130	64	500	7.8	1.0	K17	170	210	70	56	17
10...	1130	38	600	8.0	3.5	K3	67	270	93	73	22
13...	1245	24	650	8.1	5.5	K26	110	300	91	81	24
JUN											
11...	1340	5.3	651	7.9	20.0	43	130	310	57	80	26
AUG											
26...	1205	6.5	580	8.0	17.0	93	180	280	59	69	26

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAR											
29...	16	10	.4	23	6.9	220	85	12	.2	23	390
APR											
01...	13	9	.3	21	8.0	180	92	13	.2	22	332
03...	20	16	.6	29	8.8	150	100	14	.2	17	350
07...	18	15	.5	26	8.1	140	98	10	.2	17	337
10...	25	16	.7	33	8.1	180	120	14	.2	.1	414
13...	24	14	.6	31	7.1	210	110	14	.2	.1	443
JUN											
11...	20	12	.5	26	5.6	250	90	12	.3	22	421
AUG											
26...	17	11	.4	22	5.1	220	77	14	.3	25	380

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR											
29...	383	.53	17.9	.56	.210	.64	60	40	700	14	.64
APR											
01...	351	.45	44.8	.42	.230	.71	60	70	580	19	2.6
03...	329	.48	99.2	.47	.210	.64	100	80	550	54	15
07...	312	.46	58.2	.58	.160	.49	80	70	490	15	2.6
10...	373	.56	42.5	.31	.160	.49	80	60	470	8	.82
13...	386	.60	28.7	.19	.110	.34	80	40	500	5	.32
JUN											
11...	407	.57	6.02	.06	.240	.74	80	<10	1	8	.11
AUG											
26...	368	.52	6.46	.30	.140	.43	70	20	950	18	.31

475556097305100 - TURTLE RIVER ABOVE STATE PARK NEAR ARVILLA, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JUN							
11...	1155	5.7	653	8.3	20.5	480	230

K - Results based on colony count outside the acceptable range (non-ideal colony count).

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

TURTLE RIVER BASIN

475807097254600 - TURTLE RIVER BELOW STATE PARK NEAR ARVILLA, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JUN 11...	1325	5.7	666	8.3	23.0	480	300

480017097235900 - TURTLE RIVER BELOW AIR BASE NEAR MEKINOCK, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JUN 11...	1605	7.3	688	8.2	24.0	140	310

480128097203400 - TURTLE RIVER NEAR MEKINOCK, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
JUN 11...	1710	7.1	700	8.2	22.0	66	230	--	--	--	--
AUG 27...	0950	4.4	543	8.2	17.0	160	400	240	52	59	23

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
JUN 11...	--	--	--	--	--	--	--	--	--	--	--
AUG 27...	15	12	.4	21	5.8	190	78	11	.2	20	336

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
JUN 11...	--	--	--	--	--	--	--	--	--	--	--
AUG 27...	326	.46	4.05	.00	.05	.15	90	20	60	22	.26

480058097141300 - TURTLE RIVER ABOVE KELLY'S SLOUGH NEAR MANVEL, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JUN 11...	1610	6.4	1650	8.5	24.5	83	520

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

TURTLE RIVER BASIN

480020097133600 - KELLY SLOUGH NEAR MANVEL, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
MAR 31...	1415	-- *	3000	7.7	2.5	K5	K22000	540	400	130	52
APR 02...	1315	122	3800	7.7	3.0	<3	1500	630	520	150	62
05...	0950	37	5300	7.8	3.0	<2	500	890	730	210	88
08...	1120	17	6800	8.2	4.0	K1	180	1000	860	250	100
11...	1130	8.7	8000	8.5	3.0	K1	92	1300	1100	280	140
14...	1140	4.9	9100	8.6	8.0	<1	K30	1300	1200	290	150
JUN 10...	1435	1.1	20300	8.5	29.0	K32	180	3400	3200	710	390
AUG 27...	1130	13	11500	7.5	17.0	73	2300	2000	1700	430	220

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAR 31...	390	60	7.3	410	20	140	410	650	.5	13	1800
APR 02...	510	63	8.8	540	25	110	500	850	.6	10	2260
05...	770	64	11	880	33	160	690	1300	.8	13	3190
08...	900	64	12	490	38	180	790	1400	1.1	12	4060
11...	1300	68	16	1300	45	180	1100	1900	1.4	8.5	4790
14...	1300	67	15	1300	46	160	1300	1900	1.4	5.8	5150
JUN 10...	3900	70	29	4000	140	170	2800	5900	2.4	9.1	15300
AUG 27...	2300	71	23	2400	89	--	--	--	--	15	8670

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR 31...	1750	2.45	--	.81	.25	.77	620	80	450	--	--
APR 02...	2180	3.07	744	.52	.37	1.1	820	90	680	42	14
05...	3200	4.34	319	.20	.34	1.0	1300	100	1400	75	7.5
08...	3600	5.52	186	.24	.16	.49	1500	50	280	6	.28
11...	4890	6.51	113	.07	.12	.37	1800	60	190	17	.40
14...	5090	7.00	68.1	.00	.08	.25	1900	40	200	12	.16
JUN 10...	14000	20.8	45.4	1.2	.48	1.5	7000	80	680	28	.08
AUG 27...	--	12.1	311	.00	.52	1.6	3500	110	200	72	2.5

475207097294000 - HAZEN BROOK NEAR ARVILLA, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JUN 11...	0955	.18	590	7.6	18.0	770	620

* - Reverse flow

K - Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

TURTLE RIVER BASIN

475411097242800 - HAZEN BROOK NEAR EMERADO, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
MAR											
30...	1110	26	650	7.8	.0	K5	600	340	190	85	30
APR											
01...	1600	24	580	7.7	6.0	K10	400	280	150	71	26
04...	1040	14	500	7.9	3.5	<2	K33	270	120	71	23
07...	1400	7.4	525	7.9	4.5	K2	K10	260	90	66	23
10...	1415	3.0	560	8.0	8.0	<1	K7	300	91	76	27
13...	1520	1.6	560	8.2	9.0	<1	K9	300	83	77	27
JUN											
11...	1110	.01	660	8.2	18.0	1600	7100	380	29	89	38

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAR											
30...	10	6	.2	20	10	150	190	4.1	.2	21	459
APR											
01...	8.5	6	.2	18	10	130	150	4.2	.2	19	416
04...	6.0	4	.2	15	9.4	150	130	3.8	.1	15	370
07...	5.6	4	.2	13	7.7	170	100	4.2	.2	22	354
10...	6.8	5	.2	13	6.8	210	100	3.2	.2	.1	386
13...	6.4	4	.2	13	6.4	220	83	3.2	.2	.1	381
JUN											
11...	9.0	5	.2	13	4.0	350	48	2.1	.4	28	428

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR											
30...	447	.62	32.2	1.3	.20	.61	80	30	180	33	2.3
APR											
01...	372	.57	27.0	1.1	.21	.64	70	40	60	46	3.0
04...	351	.50	14.0	.44	.13	.40	100	90	340	12	.45
07...	332	.48	7.07	.13	.08	.25	70	30	10	8	.16
10...	347	.53	3.02	.07	.08	.25	100	20	7	2	.02
13...	336	.52	1.65	.00	.04	.12	50	<10	4	4	.02
JUN											
11...	429	.58	.01	.01	.08	.25	120	<10	60	10	.00

475504097214600 - HAZEN BROOK AT EMERADO, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JUN							
11...	1225	.01	820	7.9	18.0	270	2900

K - Results based on colony count outside the acceptable range (non-ideal colony count).

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
TURTLE RIVER BASIN											
05082700 - SALTWATER COULEE NEAR EMERADO, ND											
MAR											
30...	1525	46	570	7.7	1.0	130	K25000	180	95	47	14
APR											
02...	0930	45	660	7.7	1.0	110	5900	260	160	66	22
04...	1345	21	810	7.7	4.5	K8	K140	320	190	81	29
08...	0825	12	870	7.8	4.5	2	20	350	180	86	33
11...	0840	5.3	960	8.1	3.5	<1	25	410	220	98	39
14...	0910	2.4	1100	8.2	5.0	<1	22	460	250	110	44

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAR											
30...	42	32	1.4	55	13	80	110	56	.1	9.3	371
APR											
02...	38	23	1.0	49	11	100	150	42	.2	16	447
04...	50	24	1.2	61	11	130	220	59	.1	18	502
08...	44	21	1.0	58	14	170	200	55	.2	21	614
11...	56	22	1.2	68	12	190	220	78	.3	.2	675
14...	63	23	1.3	76	13	210	230	90	.3	.2	758

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR											
30...	343	.50	46.1	.73	.35	1.1	170	50	210	26	3.2
APR											
02...	409	.61	54.3	.69	.23	.71	140	50	100	6	.73
04...	549	.79	33.0	.67	.20	.61	170	30	60	4	.23
08...	557	.84	19.9	.25	.14	.43	150	20	20	2	.06
11...	610	.92	9.66	.09	.16	.49	150	20	20	2	.03
14...	677	1.02	4.86	.01	.12	.37	140	20	30	3	.02

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
05082900 - FRESHWATER COULEE NEAR EMERADO, ND							
JUN							
11...	1435	.09	15000	8.5	27.5	K44000	K35000

K - Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

TURTLE RIVER BASIN

05083000 - TURTLE RIVER AT MANVEL, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
MAR											
31...	121	151	2050	7.6	.0	K900	>10000	410	300	100	38
APR											
02...	185	481	1510	7.6	.0	K20	11000	330	230	83	29
05...	144	270	1800	7.9	3.5	K5	1000	400	260	100	37
08...	154	162	1600	7.9	3.5	K12	230	350	210	89	32
11...	162	94	1320	8.1	3.5	K10	160	340	190	84	31
14...	151	58	2240	8.2	6.5	K2	130	520	340	130	47
JUN											
10...	122	3.9	2300	8.4	21.0	K50	120	500	300	110	54
AUG											
27...	161	10	1800	8.2	19.5	1100	1900	1800	1700	410	200

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (0041)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAR											
31...	270	58	5.8	290	22	110	290	420	.4	8.0	1280
APR											
02...	200	56	4.8	210	16	100	240	300	.3	12	938
05...	250	56	5.4	270	15	140	290	370	.3	15	1170
08...	180	51	4.2	190	15	140	230	260	.3	15	977
11...	150	48	3.6	160	12	150	200	210	.3	.2	830
14...	280	53	5.4	300	16	180	330	420	.4	16	1360
JUN											
10...	310	57	6.1	330	16	200	280	470	.5	11	1400
AUG											
27...	2100	70	21	2180	83	180	1600	3600	1.5	4.5	--

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
MAR											
31...	1220	1.74	522	1.1	.25	.77	480	130	730	48	20
APR											
02...	945	1.28	1220	.77	.23	.71	330	80	340	61	79
05...	1170	1.59	853	.55	.22	.67	450	60	520	42	31
08...	909	1.33	427	.60	.12	.37	340	40	260	33	14
11...	780	1.13	211	.47	.11	.34	260	30	250	27	6.9
14...	1350	1.85	213	.28	.08	.25	420	50	280	33	5.2
JUN											
10...	1370	1.90	14.7	.00	.20	.61	540	20	60	40	.42
AUG											
27...	8120	11.0	395	.00	.20	.61	14000	40	--	106	5.2

K - Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PARK RIVER BASIN

05089130 - MIDDLE BRANCH PARK RIVER NEAR EDINBURG, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
APR											
01...	1235	4.3	520	8.5	.5	240	83	61	22	14	11
03...	1450	42	308	8.0	1.0	95	16	24	8.5	16	25
06...	1115	60	360	7.9	.0	130	41	33	12	25	27
09...	1200	32	415	7.9	.0	150	58	37	14	27	27
12...	1150	16	470	8.1	3.0	180	46	44	16	28	25
JUN											
10...	1820	5.2	605	8.3	22.5	--	--	--	--	--	--
11...	1820	--	E527	E7.5	--	190	27	47	17	32	26
JUL											
08...	1655	.67	550	8.5	27.0	260	68	62	25	21	15
16...	1300	4.2	560	8.2	23.5	250	61	61	24	19	14

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
APR										
01...	.4	19	5.1	160	89	6.1	.2	19	306	327
03...	.7	24	8.0	79	51	7.5	.1	12	--	181
06...	.9	35	9.6	91	71	12	.1	16	267	237
09...	1.0	35	8.5	108	86	11	.2	.1	265	247
12...	.9	36	8.5	130	94	12	.2	.1	312	284
JUN										
10...	--	--	--	--	--	--	--	--	--	--
11...	1.0	39	7.3	160	87	14	.3	24	339	325
JUL										
08...	.6	27	6.3	190	94	7.2	.3	25	379	355
16...	.5	26	6.5	190	88	6.2	.5	26	359	347

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
APR										
01...	.42	3.56	3.3	.19	.58	70	30	180	6	.07
03...	.25	20.5	1.5	.47	1.4	90	110	--	62	7.0
06...	.36	43.3	.83	.31	.95	120	90	130	103	17
09...	.39	26.6	.53	.21	.64	90	70	100	64	5.5
12...	.42	13.5	.65	.17	.52	120	70	50	16	.69
JUN										
10...	--	--	--	--	--	--	--	--	--	--
11...	.46	--	--	--	--	90	50	50	--	--
JUL										
08...	.52	.69	.00	.03	.09	70	<10	40	--	--
16...	.49	4.07	.23	.08	.25	70	<10	50	52	.59

05089250 - NORTH BRANCH PARK RIVER NEAR CRYSTAL, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
JUN									
12...	0900	.00	990	7.4	13.5	440	130	120	35

E - Estimated

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
				PARK RIVER BASIN					
			05089250 - NORTH BRANCH PARK RIVER NEAR CRYSTAL, ND						
JUN									
12...	46	18	1.0	55	9.1	310	200	22	.5

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
JUN								
12...	28	676	648	.92	.00	90	10	870

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
				05089500 - CART CREEK AT MOUNTAIN, ND						
NOV										
20...	0945	.56	958	--	.5	--	--	--	--	--
DEC										
18...	1435	E.04	1040	--	--	--	--	--	--	--
MAR										
29...	1340	1.2	858	--	.5	--	--	--	--	--
APR										
01...	1235	26	320	--	.5	--	--	--	--	--
04...	1140	28	365	8.0	.5	130	30	31	13	22
10...	0945	6.1	687	--	.5	--	--	--	--	--
17...	0805	3.3	747	--	4.5	--	--	--	--	--
MAY										
06...	1435	.02	932	8.2	10.0	420	150	110	35	53
JUN										
05...	2000	.40	918	--	20.0	--	--	--	--	--
12...	1155	.04	1010	7.8	18.0	440	140	120	34	55
JUL										
24...	1415	.03	872	--	22.0	--	--	--	--	--
SEP										
10...	0940	.65	838	--	12.0	--	--	--	--	--
30...	1045	2.0	907	--	12.0	--	--	--	--	--

DATE	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
APR										
01...	--	--	--	--	--	--	--	--	--	--
04...	26	.8	27	4.5	123	0	101	2.0	68	11
10...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
MAY										
06...	21	1.1	59	6.0	324	0	266	3.3	230	24
JUN										
05...	--	--	--	--	--	--	--	--	--	--
12...	21	1.1	64	9.4	--	--	300	--	240	22

E - Estimated

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PARK RIVER BASIN

05089500 - CART CREEK AT MOUNTAIN, ND

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR										
01...	--	--	--	--	--	--	--	--	--	--
04...	.2	14	227	229	.31	17.2	1.0	60	140	80
10...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
MAY										
06...	.4	22	625	642	.85	1.38	.48	100	20	20
JUN										
05...	--	--	--	--	--	--	--	--	--	--
12...	.6	28	705	690	.96	.08	--	160	<10	160

05089950 - NORTH BRANCH PARK RIVER NEAR NASH, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
APR											
03...	1110	14	1280	7.7	1.0	260	4	63	26	160	55
06...	1430	208	500	7.7	1.0	160	53	42	14	33	29
09...	1500	111	425	7.8	3.0	150	54	40	13	28	27
12...	1430	45	540	7.8	4.5	170	60	45	14	37	30
JUN											
10...	1100	.00	1410	8.6	19.5	--	--	--	--	--	--
11...	1100	--	E1440	E8.2	--	330	21	75	35	170	52
JUL											
08...	1100	.03	1580	7.8	20.0	390	140	86	42	170	48

DATE	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
APR										
03...	4.3	170	12	260	110	200	.3	15	771	758
06...	1.1	46	13	110	79	30	.1	15	334	300
09...	1.0	39	11	99	79	22	.2	.2	292	259
12...	1.2	49	12	110	100	32	.2	.2	350	313
JUN										
10...	--	--	--	--	--	--	--	--	--	--
11...	4.1	180	13	310	130	210	.5	12	859	832
JUL										
08...	3.8	180	14	250	170	250	.5	6.0	964	890

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)
APR										
03...	1.05	29.1	1.2	.73	2.2	360	70	1700	38	1.4
06...	.45	188	1.6	.30	.92	240	100	340	58	33
09...	.40	87.5	1.4	.24	.74	110	40	180	108	32
12...	.48	42.5	1.3	.23	.71	120	30	90	56	6.8
JUN										
10...	--	--	--	--	--	--	--	--	--	--
11...	1.17	--	--	--	--	370	40	180	--	--
JUL										
08...	1.31	.08	.00	.18	.55	270	30	520	--	--

E - Estimated

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485520098231000 - LITTLE SOUTH PEMBINA RIVER ABOVE LAKE CARMEL, ND

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	COLOR (PLATINUM COBALT UNITS) (00080)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
AUG 21...	0900	.03	607	7.8	17.0	30	14	4.5	50	48000	1000
SEP 26...	0947	.02	751	8.2	6.5	70	13	8.7	75	K19000	140

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
AUG 21...	1300	55	18	41	29	1.2	50	8.7	160	100	20
SEP 26...	200	65	23	52	29	1.4	63	11	250	100	27

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)
AUG 21...	.2	25	405	.00	.00	.00	.00	.00	.04	.05	.79
SEP 26...	.3	26	522	.00	.00	.00	.00	.00	.00	.00	1.1

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOSPHORUS, HYDROLYZABLE TOTAL (MG/L AS P) (00669)	PHOSPHORUS, HYDROLYZABLE DISSOL. (MG/L AS P) (00672)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)
AUG 21...	.83	.83	1.7	.32	.98	.13	.04	210	620	40
SEP 26...	1.1	1.1	2.0	.16	.49	.10	.03	160	900	10

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS) (70950)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)
AUG 21...	680	190	31	2.2	15000	--	--	--	--	--
SEP 26...	620	40	17	3.3	760	27.9	21.9	172	34.9	1.55

K - Results based on colony count outside the acceptable range (non-ideal colony count).

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485520098231000 - LITTLE SOUTH PEMBINA RIVER ABOVE LAKE CARMEL, ND

DATE	AUG 21,80		SEP 26,80	
TIME	0900		0947	
TOTAL CELLS/ML	15000		760	
DIVERSITY: DIVISION	1.7		1.0	
.CLASS	2.0		1.1	
..ORDER	2.6		1.1	
...FAMILY	3.0		1.6	
....GENUS	3.4		2.5	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)				
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...MICRACTINIACEAE				
....MICRACTINIUM	--	-	7	1
...OOCYSTACEAE				
....ANKISTRODESMUS	270	2	21	3
....FRANCEIA	--	-	7	1
....KIRCHNERIELLA	--	-	14	2
....OOCYSTIS	350	2	25	3
....SELENASTRUM	350	2	--	-
...SCENEDESMACEAE				
....CRUCIGENIA	1100	7	400#	53
....SCENEDESMUS	1200	8	120#	16
....TETRASTRUM	--	-	14	2
..VOLVOCALES				
...CHLAMYDOMONADACEAE				
....CHLAMYDOMONAS	620	4	--	-
...VOLVOCACEAE				
....PANDORINA	2800#	19	--	-
CHRYSOPHYTA				
.BACILLARIOPHYCEAE				
..CENTRALES				
...COSCINODISCACEAE				
....CYCLOTELLA	2200	15	25	3
....MELOSIRA	180	1	--	-
..PENNALES				
...NAVICULACEAE				
....NAVICULA	--	-	*	0
...NITZSCHIACEAE				
....NITZSCHIA	88	1	*	0
...SURIRELLACEAE				
....SURIRELLA	88	1	--	-
.CHRYSOPHYCEAE				
..CHRYSOMONADALES				
...CHROMULINACEAE				
....CHRYSOCOCCUS	--	-	53	7
...OCHROMONADACEAE				
....DINOBRYON	350	2	--	-
...SYNURACEAE				
....SYNURA	3000#	20	--	-
CRYPTOPHYTA (CRYPTOMONADS)				
.CRYPTOPHYCEAE				
..CRYPTOMONADALES				
...CRYPTOMONADACEAE				
....CRYPTOMONAS	530	4	21	3
CYANOPHYTA (BLUE-GREEN ALGAE)				
.CYANOPHYCEAE				
..CHROOCOCCALES				
...CHROOCOCCACEAE				
....ANACYSTIS	88	1	--	-
EUGLENOPHYTA (EUGLENOIDS)				
.EUGLENOPHYCEAE				
..EUGLENALES				
...EUGLENACEAE				
....EUGLENA	270	2	7	1
....PHACUS	--	-	*	0
....TRACHELOMONAS	1300	9	32	4
PYRRHOPHYTA (FIRE ALGAE)				
.DINOPHYCEAE				
..PERIDINIALES				
...CERATIACEAE				
....CERATIUM	88	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)

PEMBINA RIVER BASIN

485614098215300 - LAKE CARMEL (SHALLOW) NEAR MT CARMEL, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)
NOV											
08...	0855	--	5.5	--	--	--	-4.0	--	30	13	--
08...	0856	.0	--	--	--	--	--	--	--	--	--
08...	0900	3.3	--	--	720	8.2	--	3.5	--	--	--
08...	0905	4.9	--	--	715	8.2	--	4.0	--	--	--
JAN											
17...	0928	--	4.0	10.66	--	--	-14.0	--	55	8.5	24.0
17...	0929	.0	--	--	--	--	--	--	--	--	--
17...	0930	3.3	--	--	822	8.2	--	1.5	--	--	--

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)
NOV											
08...	--	--	--	--	--	67	17	47	37	1.3	54
08...	--	--	250	<3	K13	--	--	--	--	--	--
08...	11.0	92	--	--	--	--	--	--	--	--	--
08...	7.6	64	--	--	--	--	--	--	--	--	--
JAN											
17...	--	--	--	--	--	83	26	58	28	1.4	68
17...	--	--	K6	<2	K8	--	--	--	--	--	--
17...	12.8	94	--	--	--	--	--	--	--	--	--

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIOUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)
NOV											
08...	6.8	180	150	10	.2	6.1	549	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	.01	.04	.00	.00
08...	--	--	--	--	--	--	--	--	--	--	--
JAN											
17...	9.6	210	210	11	.3	27	612	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	.81	3.6	.04	.16

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DISSOL. (MG/L AS P) (00672)
NOV											
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
08...	.01	.17	.22	1.4	1.6	1.6	2.3	.03	.09	.13	.02
08...	--	--	--	--	--	--	--	--	--	--	--
JAN											
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	.86	.38	.49	2.0	2.4	3.3	11	.32	.98	.14	.01

K - Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485614098215300 - LAKE CARMEL (SHALLOW) NEAR MT CARMEL, ND

DATE	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
NOV										
08...	110	650	<10	950	360	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	22	.8	29000	42.6	.000
08...	--	--	--	--	--	--	--	--	--	--
JAN										
17...	150	430	<10	880	570	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	20	2.4	80000	402	17.5

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

485614098215300 - LAKE CARMEL (SHALLOW) NEAR MT CARMEL, ND

DATE	NOV 8,79		JAN 17,80	
TIME	0900		0930	
TOTAL CELLS/ML	29000		80000	
DIVERSITY: DIVISION	1.3		1.1	
.CLASS	1.3		1.1	
..ORDER	1.3		1.3	
...FAMILY	1.4		1.3	
....GENUS	1.4		1.4	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)				
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...MICRACTINIACEAE				
....GOLENKINIA	640	2	--	-
...OOCYSTACEAE				
....ANKISTRODESMUS	--	-	1500	2
....KIRCHNERIELLA	--	-	3400	4
....SELENASTRUM	160	1	--	-
...SCENEDESMACEAE				
....TETRASTRUM	640	2	--	-
..VOLVOCALES				
...CHLAMYDOMONADACEAE				
....CHLAMYDOMONAS	160	1	13000#	16
CHRYSOPHYTA				
.BACILLARIOPHYCEAE				
..CENTRALES				
...COSCINODISCACEAE				
....CYCLOTELLA	16000#	55	--	-
CRYPTOPHYTA (CRYPTOMONADS)				
.CRYPTOPHYCEAE				
..CRYPTOMONADALES				
...CRYPTOMONADACEAE				
....CRYPTOMONAS	320	1	57000#	71
CYANOPHYTA (BLUE-GREEN ALGAE)				
.CYANOPHYCEAE				
..HORMOGONALES				
...RIVULARIACEAE				
....RAPHIDIOPSIS	11000#	38	--	-
EUGLENOPHYTA (EUGLENOIDS)				
.EUGLENOPHYCEAE				
..EUGLENALES				
...EUGLENACEAE				
....TRACHELOMONAS	--	-	4400	5
PYRRHOPHYTA (FIRE ALGAE)				
.DINOPHYCEAE				
..PERIDINIALES				
...GLENODINIACEAE				
....GLENODINIUM	--	-	980	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485533098192200 - LAKE CARMEL (MIDDLE) NEAR MT CARMEL, ND

DATE	TIME	SAMP- LING DEPTH (FT) (00003)	RESER- VOIR DEPTH (FEET) (72025)	RESER- VOIR ELEV- ATION (FEET ABOVE DATUM) (00062)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE, WATER (DEG C) (00010)	COLOR (PLAT- INUM COBALT UNITS) (00080)	TUR- BID- ITY (NTU) (00076)	TRANS- PAR- ENCY (SECCHI DISK) (IN) (00077)
MAR											
13...	1527	--	16	10.76	--	7.6	-6.0	--	40	2.1	46.0
13...	1528	.0	--	--	--	--	--	--	--	--	--
13...	1530	3.3	--	--	700	7.6	--	1.0	--	--	--
13...	1535	6.6	--	--	722	7.6	--	1.5	--	--	--
13...	1545	9.9	--	--	722	7.6	--	2.0	--	--	--
MAY											
21...	1113	--	15	9.60	--	--	29.0	--	30	7.5	46.0
21...	1114	.0	--	--	--	--	--	--	--	--	--
21...	1115	3.3	--	--	560	7.9	--	15.5	--	--	--
21...	1130	6.6	--	--	562	7.9	--	15.5	--	--	--
21...	1155	14	--	--	570	7.9	--	14.0	--	--	--
JUN											
19...	1302	--	11	10.15	601	8.2	22.5	19.0	40	12	9.0
19...	1303	.0	--	--	--	--	--	--	--	--	--
19...	1305	3.3	--	--	589	8.3	--	20.0	--	--	--
19...	1315	6.6	--	--	595	8.4	--	19.0	--	--	--
19...	1330	11	--	--	582	8.4	--	18.0	--	--	--
JUL											
17...	1245	--	11	10.33	600	8.4	24.0	23.0	45	7.4	21.0
17...	1246	.0	--	--	--	--	--	--	--	--	--
17...	1247	3.3	--	--	622	8.6	--	23.0	--	--	--
17...	1249	6.6	--	--	581	8.5	--	22.5	--	--	--
17...	1251	9.9	--	--	578	8.4	--	22.5	--	--	--
AUG											
20...	1230	--	11	--	590	8.1	20.5	--	40	14	20.0
20...	1231	.0	--	--	--	--	--	--	--	--	--
20...	1232	3.3	--	--	591	8.2	--	19.5	--	--	--
20...	1234	6.6	--	--	588	8.2	--	19.5	--	--	--
20...	1236	11	--	--	590	8.2	--	19.5	--	--	--
SEP											
25...	1400	--	13	10.42	604	8.3	8.0	--	35	16	14.0
25...	1401	.0	--	--	--	--	--	--	--	--	--
25...	1402	3.3	--	--	602	8.3	--	8.5	--	--	--
25...	1404	6.6	--	--	604	8.3	--	8.0	--	--	--
25...	1406	13	--	--	608	8.3	--	8.0	--	--	--

DATE	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM+ POTAS- SIUM DIS- SOLVED (MG/L AS NA) (00933)
MAR											
13...	--	--	--	--	--	73	22	49	27	1.3	57
13...	--	--	K19	K21	<1	--	--	--	--	--	--
13...	9.4	70	--	--	--	--	--	--	--	--	--
13...	4.0	30	--	--	--	--	--	--	--	--	--
13...	5.0	38	--	--	--	--	--	--	--	--	--
MAY											
21...	--	--	--	--	--	54	17	37	27	1.1	44
21...	--	--	950	K14	K2	--	--	--	--	--	--
21...	6.7	69	--	--	--	--	--	--	--	--	--
21...	6.7	69	--	--	--	--	--	--	--	--	--
21...	4.4	44	--	--	--	--	--	--	--	--	--
JUN											
19...	--	--	--	--	--	56	18	39	27	1.2	47
19...	--	--	K9400	K2	K7	--	--	--	--	--	--
19...	7.5	86	--	--	--	--	--	--	--	--	--
19...	7.5	85	--	--	--	--	--	--	--	--	--
19...	6.1	68	--	--	--	--	--	--	--	--	--
JUL											
17...	--	--	--	--	--	57	18	39	27	1.2	48
17...	--	--	K12000	K18	27	--	--	--	--	--	--
17...	7.2	87	--	--	--	--	--	--	--	--	--
17...	6.1	73	--	--	--	--	--	--	--	--	--
17...	5.8	69	--	--	--	--	--	--	--	--	--
AUG											
20...	--	--	--	--	--	56	18	39	27	1.2	47
20...	--	--	K15000	K7	380	--	--	--	--	--	--
20...	6.8	79	--	--	--	--	--	--	--	--	--
20...	6.8	79	--	--	--	--	--	--	--	--	--
20...	5.5	64	--	--	--	--	--	--	--	--	--
SEP											
25...	--	--	--	--	--	57	18	41	28	1.2	50
25...	--	--	2300	K1	K10	--	--	--	--	--	--
25...	9.0	81	--	--	--	--	--	--	--	--	--
25...	9.0	80	--	--	--	--	--	--	--	--	--
25...	8.8	78	--	--	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)

PEMBINA RIVER BASIN

485533098192200 - LAKE CARMEL (MIDDLE) NEAR MT CARMEL, ND

DATE	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)
MAR											
13...	7.9	170	190	9.2	.2	26	500	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	.75	3.3	.01	.03
13...	--	--	--	--	--	--	--	.98	4.3	.02	.07
13...	--	--	--	--	--	--	--	.91	4.0	.02	.07
MAY											
21...	7.6	140	140	19	.2	19	377	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	.03	.13	.01	.03
21...	--	--	--	--	--	--	--	.03	<.13	.01	.03
21...	--	--	--	--	--	--	--	.05	.22	.01	.03
JUN											
19...	8.3	160	130	11	.2	19	404	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	.04	.18	.01	.03
19...	--	--	--	--	--	--	--	.03	.13	.02	.07
19...	--	--	--	--	--	--	--	.04	<.18	.02	.07
JUL											
17...	8.9	170	130	8.9	.4	23	430	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	.00	.00	.01	.03
17...	--	--	--	--	--	--	--	.00	.00	.01	.03
17...	--	--	--	--	--	--	--	.00	.00	.01	.03
AUG											
20...	8.4	170	120	12	.2	26	47	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	.00	<.00	.01	.03
20...	--	--	--	--	--	--	--	.00	<.00	.02	.07
20...	--	--	--	--	--	--	--	.00	<.00	.01	.03
SEP											
25...	8.7	170	110	9.5	.2	27	449	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	.41	1.8	.01	.03
25...	--	--	--	--	--	--	--	.39	1.7	.01	.03
25...	--	--	--	--	--	--	--	.37	1.6	.01	.03

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOSPHORUS, HYDROLYZABLE TOTAL (MG/L AS P) (00669)	PHOSPHORUS, HYDROLYZABLE DISSOL. (MG/L AS P) (00672)
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	.76	.08	.10	1.4	1.5	2.3	3.0	.32	.98	.01	.08
13...	1.0	.08	.10	1.2	1.3	2.3	2.6	.40	1.2	.04	.00
13...	.93	.13	.17	1.2	1.3	2.2	2.6	.39	1.2	.02	.00
MAY											
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	.04	.41	.53	1.1	1.5	1.5	1.6	.41	1.3	.07	.05
21...	.04	.41	.53	1.2	1.6	1.6	2.5	.36	1.1	.16	.10
21...	.06	.48	.62	.72	1.2	1.3	1.8	.41	1.3	.04	.06
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	.05	.33	.43	2.2	2.5	2.6	2.8	.39	1.2	--	--
19...	.05	.33	.43	1.4	1.7	1.8	3.1	.34	1.0	--	--
19...	.06	.40	.52	1.2	1.6	1.7	3.8	.39	1.2	--	--
JUL											
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	.00	.13	.17	1.4	1.5	1.5	1.5	.55	1.7	.09	.05
17...	.00	.15	.19	1.3	1.4	1.4	1.4	.56	1.7	.09	.06
17...	.00	.18	.23	1.2	1.4	1.4	1.6	.56	1.7	.10	.06
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	.00	.23	.30	1.3	1.5	1.5	1.6	.66	2.0	.09	.06
20...	.00	.21	.27	1.2	1.4	1.4	1.9	.67	2.1	.09	.06
20...	.00	.21	.27	1.2	1.4	1.4	2.0	.68	2.1	.06	.05
SEP											
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	.42	.23	.30	1.2	1.4	1.8	2.4	.58	1.8	.08	.04
25...	.40	.23	.30	.97	1.2	1.6	2.2	.59	1.8	.06	.06
25...	.38	.23	.30	1.2	1.4	1.8	2.1	.59	1.8	.06	.05

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485533098192200 - LAKE CARMEL (MIDDLE) NEAR MT CARMEL, ND

DATE	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
MAR										
13...	90	240	<10	1100	1100	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	13	1.3	11000	61.6	8.12
13...	--	--	--	--	--	12	.8	--	--	--
13...	--	--	--	--	--	11	.7	--	--	--
MAY										
21...	70	360	40	930	920	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	16	.7	170	.920	.000
21...	--	--	--	--	--	18	.7	--	--	--
21...	--	--	--	--	--	14	.7	--	--	--
JUN										
19...	90	430	30	830	630	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	14	2.2	420000	103	.000
19...	--	--	--	--	--	12	1.8	--	--	--
19...	--	--	--	--	--	16	2.0	--	--	--
JUL										
17...	90	270	10	790	510	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	15	1.1	93000	32.0	2.34
17...	--	--	--	--	--	13	.8	--	--	--
17...	--	--	--	--	--	14	1.0	--	--	--
AUG										
20...	90	430	<10	1200	800	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	32	.7	55000	22.9	.000
20...	--	--	--	--	--	22	1.1	--	--	--
20...	--	--	--	--	--	23	.8	--	--	--
SEP										
25...	10	580	60	860	770	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	17	.6	18000	6.87	.000
25...	--	--	--	--	--	19	.5	--	--	--
25...	--	--	--	--	--	14	.5	--	--	--

PEMBINA RIVER BASIN

485533098192200 - LAKE CARMEL (MIDDLE) NEAR MT CARMEL, ND

DATE	MAR 13,80	MAY 21,80	JUN 19,80	JUL 17,80	AUG 20,80	SEP 25,80
TIME	1530	1115	1305	1247	1232	1402
TOTAL CELLS/ML	11000	170	420000	93000	55000	18000
DIVERSITY: DIVISION	1.5	1.3	0.1	1.0	0.2	0.2
.CLASS	1.5	1.3	0.1	1.0	0.2	0.2
..ORDER	1.7	1.8	0.3	1.6	1.1	0.8
...FAMILY	2.0	2.1	0.3	1.8	1.1	0.8
....GENUS	2.0	2.7	1.2	2.0	1.1	0.8

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	--	-	--	-	--	-	*	0	--	-	*	0
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	2900	1	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	500	5	--	-	*	0	*	0	--	-	*	0
....CHODATELLA	--	-	--	-	*	0	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	12000	12	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	*	0
....SELENASTRUM	--	-	--	-	--	-	*	0	--	-	*	0
....TREUBARIA	--	-	--	-	--	-	480	1	--	-	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	--	-	--	-	--	-	1400	2	400	1	130	1
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	5700#	50	--	-	*	0	3100	3	*	0	*	0
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	--	-	26#	15	*	0	3100	3	--	-	*	0
....MELOSIRA	--	-	26#	15	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	13	8	--	-	--	-	--	-	--	-
..PENNALES												
...NITZSCHIACEAE												
....NITZSCHIA	--	-	26#	15	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	26#	15	--	-	970	1	500	1	*	0
...CRYPTOMONADACEAE												
....CRYPTOMONAS	1000	9	39#	23	--	-	*	0	*	0	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	13	8	11000	3	58000#	62	22000#	41	3000#	16
....GOMPHOSPHAERIA	--	-	--	-	--	-	1900	2	--	-	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	270000#	64	--	-	--	-	--	-
....APHANIZOMENON	--	-	--	-	140000#	32	7000	8	32000#	57	15000#	82
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	*	0	4100	4	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	*	0	--	-	*	0
....TRACHELOMONAS	300	3	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	2100#	19	--	-	--	-	--	-	--	-	--	-
...PERIDINIACEAE												
....PERIDINIUM	1600	14	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485436098164600 - LAKE CARMEL (DEEP) NEAR MT CARMEL, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE, WATER (DEG C) (00010)	COLOR (PLATINUM COBALT UNITS) (00080)	TURBIDITY (NTU) (00076)	TRANSPARENCY (SECCHI DISK) (IN) (00077)
JAN											
16...	1438	--	24	10.66	--	--	-5.0	--	20	2.2	4.8
16...	1440	.0	--	--	--	--	--	--	--	--	--
16...	1441	3.3	--	--	661	7.7	--	2.5	--	--	--
16...	1500	6.6	--	--	641	7.7	--	3.0	--	--	--
16...	1502	13	--	--	621	7.7	--	4.0	--	--	--
16...	1510	19	--	--	640	7.7	--	4.0	--	--	--
16...	1533	24	--	--	682	7.7	--	4.0	--	--	--
MAR											
14...	1102	--	26	10.57	--	--	-9.0	--	40	2.3	48.0
14...	1103	.0	--	--	--	--	--	--	--	--	--
14...	1105	3.3	--	--	699	8.2	--	1.0	--	--	--
14...	1110	6.6	--	--	647	7.9	--	1.0	--	--	--
14...	1115	13	--	--	675	7.7	--	2.0	--	--	--
14...	1120	19	--	--	703	7.6	--	3.0	--	--	--
14...	1125	26	--	--	718	7.4	--	4.0	--	--	--
MAY											
21...	0843	--	27	9.60	560	8.2	22.0	15.0	30	7.2	72.0
21...	0844	.0	--	--	--	--	--	--	--	--	--
21...	0845	3.3	--	--	560	8.2	--	15.0	--	--	--
21...	0915	6.6	--	--	561	8.2	--	15.0	--	--	--
21...	0930	13	--	--	561	8.2	--	14.5	--	--	--
21...	0945	19	--	--	568	8.1	--	14.5	--	--	--
21...	1000	26	--	--	580	7.7	--	10.0	--	--	--
JUN											
19...	0942	--	30	10.15	591	8.0	18.0	18.0	40	5.0	39.0
19...	0943	.0	--	--	--	--	--	--	--	--	--
19...	0945	3.3	--	--	580	8.1	--	18.5	--	--	--
19...	1005	6.6	--	--	608	8.1	--	18.0	--	--	--
19...	1015	13	--	--	579	8.1	--	18.0	--	--	--
19...	1030	19	--	--	590	8.0	--	18.0	--	--	--
19...	1055	26	--	--	587	8.0	--	18.0	--	--	--
19...	1120	29	--	--	595	8.0	--	18.0	--	--	--
JUL											
17...	0858	--	27	10.33	580	8.6	26.0	23.0	50	4.9	36.0
17...	0859	.0	--	--	--	--	--	--	--	--	--
17...	0900	3.3	--	--	584	8.7	--	23.0	--	--	--
17...	0902	6.6	--	--	586	8.6	--	23.0	--	--	--
17...	0904	13	--	--	600	8.6	--	23.0	--	--	--
17...	0906	19	--	--	595	8.6	--	22.0	--	--	--
17...	0908	26	--	--	600	8.6	--	20.0	--	--	--
AUG											
20...	1020	--	28	--	598	8.1	19.0	--	30	6.8	32.0
20...	1021	.0	--	--	--	--	--	--	--	--	--
20...	1022	3.3	--	--	589	8.1	--	19.0	--	--	--
20...	1024	6.6	--	--	589	8.2	--	19.0	--	--	--
20...	1026	13	--	--	588	8.1	--	18.5	--	--	--
20...	1028	19	--	--	597	8.1	--	18.0	--	--	--
20...	1030	26	--	--	597	7.9	--	18.0	--	--	--
SEP											
25...	1100	--	28	10.42	593	8.3	6.0	--	35	14	17.0
25...	1101	.0	--	--	--	--	--	--	--	--	--
25...	1102	3.3	--	--	584	8.4	--	9.5	--	--	--
25...	1104	6.6	--	--	589	8.3	--	9.0	--	--	--
25...	1106	13	--	--	599	8.3	--	9.0	--	--	--
25...	1108	19	--	--	595	8.3	--	9.5	--	--	--
25...	1110	26	--	--	598	8.3	--	9.0	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485436098164600 - LAKE CARMEL (DEEP) NEAR MT CARMEL, ND

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)
JAN											
16...	--	--	--	--	--	60	19	42	28	1.2	49
16...	--	--	<1	K1	<1	--	--	--	--	--	--
16...	4.8	36	--	--	--	--	--	--	--	--	--
16...	4.7	36	--	--	--	--	--	--	--	--	--
16...	3.8	30	--	--	--	--	--	--	--	--	--
16...	1.2	9	--	--	--	--	--	--	--	--	--
16...	1.0	7	--	--	--	--	--	--	--	--	--
MAR											
14...	--	--	--	--	--	70	22	46	27	1.2	54
14...	--	--	K6	26	K4	--	--	--	--	--	--
14...	6.6	59	--	--	--	--	--	--	--	--	--
14...	4.0	29	--	--	--	--	--	--	--	--	--
14...	2.8	22	--	--	--	--	--	--	--	--	--
14...	.4	3	--	--	--	--	--	--	--	--	--
14...	.2	2	--	--	--	--	--	--	--	--	--
MAY											
21...	--	--	--	--	--	55	18	38	27	1.1	46
21...	--	--	4200	K18	K10	--	--	--	--	--	--
21...	7.9	80	--	--	--	--	--	--	--	--	--
21...	7.9	80	--	--	--	--	--	--	--	--	--
21...	7.8	78	--	--	--	--	--	--	--	--	--
21...	7.6	78	--	--	--	--	--	--	--	--	--
21...	1.3	12	--	--	--	--	--	--	--	--	--
JUN											
19...	--	--	--	--	--	56	18	38	27	1.1	46
19...	--	--	1200	K1	22	--	--	--	--	--	--
19...	6.2	72	--	--	--	--	--	--	--	--	--
19...	6.1	68	--	--	--	--	--	--	--	--	--
19...	5.9	66	--	--	--	--	--	--	--	--	--
19...	5.8	65	--	--	--	--	--	--	--	--	--
19...	4.1	46	--	--	--	--	--	--	--	--	--
19...	3.7	41	--	--	--	--	--	--	--	--	--
JUL											
17...	--	--	--	--	--	57	18	39	27	1.2	48
17...	--	--	K16000	K4	880	--	--	--	--	--	--
17...	8.8	106	--	--	--	--	--	--	--	--	--
17...	8.3	100	--	--	--	--	--	--	--	--	--
17...	8.3	100	--	--	--	--	--	--	--	--	--
17...	6.3	75	--	--	--	--	--	--	--	--	--
17...	2.7	31	--	--	--	--	--	--	--	--	--
AUG											
20...	--	--	--	--	--	56	17	39	28	1.2	48
20...	--	--	4500	K3	35	--	--	--	--	--	--
20...	5.8	67	--	--	--	--	--	--	--	--	--
20...	5.8	67	--	--	--	--	--	--	--	--	--
20...	5.3	60	--	--	--	--	--	--	--	--	--
20...	4.5	51	--	--	--	--	--	--	--	--	--
20...	1.6	18	--	--	--	--	--	--	--	--	--
SEP											
25...	--	--	--	--	--	56	18	41	28	1.2	49
25...	--	--	K5	K3	K8	--	--	--	--	--	--
25...	8.3	76	--	--	--	--	--	--	--	--	--
25...	8.3	75	--	--	--	--	--	--	--	--	--
25...	8.2	74	--	--	--	--	--	--	--	--	--
25...	8.2	74	--	--	--	--	--	--	--	--	--
25...	8.2	74	--	--	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485436098164600 - LAKE CARMEL (DEEP) NEAR MT CARMEL, ND

DATE	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)
JAN											
16...	7.2	160	150	8.9	.2	22	451	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	.91	4.0	.02	.07
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	.83	3.7	.03	.10
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	.57	2.5	.02	.07
MAR											
14...	7.6	170	180	9.3	.2	26	495	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	.94	4.2	.01	.03
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	.96	4.3	.01	.03
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	.64	2.8	.01	.03
MAY											
21...	7.6	140	130	9.1	.2	20	379	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	.06	.27	.01	.03
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	.07	.31	.01	.03
21...	--	--	--	--	--	--	--	.04	<.18	.01	.03
JUN											
19...	8.2	160	130	8.1	.2	20	399	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	.10	.44	.02	.07
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	.10	<.44	.02	.07
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	.10	.44	.02	.07
JUL											
17...	9.1	170	120	8.7	.5	23	441	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	.00	.00	.00	.00
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	.00	.00	.01	.03
17...	--	--	--	--	--	--	--	.00	.00	.01	.03
AUG											
20...	8.5	170	120	9.5	.2	26	420	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	.00	.00	.01	.03
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	.00	<.00	.01	.03
20...	--	--	--	--	--	--	--	.00	.00	.01	.03
SEP											
25...	8.4	170	120	9.5	.2	27	385	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	.61	2.7	.02	.07
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	.62	2.7	.01	.03
25...	--	--	--	--	--	--	--	.62	2.7	.01	.03

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485436098164600 - LAKE CARMEL (DEEP) NEAR MT CARMEL, ND

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DISSOL. (MG/L AS P) (00672)
JAN											
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	.93	.04	.05	1.6	1.6	2.5	2.9	.42	1.3	.09	.00
16...	--	--	--	--	--	--	--	--	--	--	--
16...	.86	.04	.05	1.7	1.7	2.6	2.7	.44	1.4	.01	.05
16...	--	--	--	--	--	--	--	--	--	--	--
16...	.59	.54	.70	1.5	2.0	2.6	3.0	.67	2.1	.00	.00
MAR											
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	.95	.06	.08	1.4	1.5	2.5	3.0	.49	1.5	.00	.03
14...	--	--	--	--	--	--	--	--	--	--	--
14...	.97	.17	.22	1.2	1.4	2.4	2.3	.52	1.6	.00	.02
14...	--	--	--	--	--	--	--	--	--	--	--
14...	.65	.59	.76	1.2	1.8	2.5	2.4	.63	1.9	.00	.02
MAY											
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	.07	.35	.45	.85	1.2	1.3	2.9	.33	1.0	.03	.04
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	.08	.35	.45	1.4	1.7	1.8	1.7	.30	.92	.02	.08
21...	.05	.74	.95	.86	1.6	1.7	1.9	.59	1.8	.17	.08
JUN											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	.12	.45	.58	1.3	1.7	1.8	2.0	.40	1.2	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	.12	.45	.58	1.4	1.8	1.9	1.9	.43	1.3	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	.12	.47	.61	1.3	1.8	1.9	2.8	.44	1.4	--	--
JUL											
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	.00	.06	.08	1.3	1.4	1.4	2.0	.41	1.3	.08	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	.00	.21	.27	1.3	1.5	1.5	1.6	.44	1.4	.06	.04
17...	.00	.19	.24	1.5	1.7	1.7	1.6	.44	1.4	.07	.04
AUG											
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	.00	.38	.49	1.4	1.8	1.8	1.6	.76	2.3	.08	.04
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	.00	.43	.55	1.1	1.5	1.5	2.8	.75	2.3	.14	.05
20...	.00	.73	.94	1.1	1.8	1.8	2.2	.84	2.6	.10	.06
SEP											
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	.63	.24	.31	1.1	1.3	1.9	2.5	.58	1.8	.05	.05
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	.63	.24	.31	1.2	1.4	2.0	2.8	.59	1.8	.05	.06
25...	.63	.24	.31	1.2	1.4	2.0	2.4	.60	1.8	.06	.05

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485436098164600 - LAKE CARMEL (DEEP) NEAR MT CARMEL, ND

DATE	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
JAN										
16...	80	110	<10	1500	1500	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	15	.7	19000	42.5	4.27
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	.3	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	9.7	.4	--	--	--
MAR										
14...	90	150	<10	1600	1600	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	14	.8	8400	100	13.7
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	11	.2	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	12	.3	--	--	--
MAY										
21...	70	290	30	880	880	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	20	.6	350	.620	.000
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	11	.7	--	--	--
21...	--	--	--	--	--	16	1.0	--	--	--
JUN										
19...	80	380	20	790	760	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	14	.3	50000	3.64	.000
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	14	.2	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	15	.3	--	--	--
JUL										
17...	90	160	30	830	680	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	440000	81.1	.000
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	14	.8	--	--	--
17...	--	--	--	--	--	13	1.0	--	--	--
AUG										
20...	120	240	10	1300	1200	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	40	.5	4700	1.97	.000
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	18	.3	--	--	--
20...	--	--	--	--	--	23	.4	--	--	--
SEP										
25...	0	470	40	1200	1100	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	18	.6	5600	3.42	.000
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	15	.6	--	--	--
25...	--	--	--	--	--	30	.6	--	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485436098164600 - LAKE CARMEL (DEEP) NEAR MT CARMEL, ND

DATE	JAN 16,80	MAR 14,80	MAY 21,80	JUN 19,80
TIME	1441	1105	0845	0945
TOTAL CELLS/ML	19000	8400	350	50000
DIVERSITY: DIVISION	1.1	0.9	1.6	0.1
.CLASS	1.1	0.9	1.6	0.1
..ORDER	1.7	1.5	2.1	0.8
...FAMILY	1.7	1.5	2.3	0.8
....GENUS	2.3	1.6	2.3	1.3

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	26	7	*	0
...OOCYSTACEAE								
....ANKISTRODESMUS	1300	7	1200	14	--	-	--	-
....CHLORELLA	3600#	20	--	-	--	-	--	-
....KIRCHNERIELLA	2200	12	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	*	0
....SELENASTRUM	--	-	150	2	--	-	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	4300#	23	5200#	62	--	-	*	0
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	110	1	--	-	--	-	*	0
....MELOSIRA	--	-	--	-	26	7	--	-
..PENNALES								
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	13	4	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	13	4	*	0
...CRYPTOMONADACEAE								
....CRYPTOMONAS	6600#	36	1500#	18	90#	26	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	39	11	8500#	17
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	7100	14
....APHANIZOMENON	--	-	--	-	--	-	34000#	68
...OSCILLATORIACEAE								
....PHORMIDIUM	--	-	--	-	140#	41	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	450	2	370	4	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485436098164600 - LAKE CARMEL (DEEP) NEAR MT CARMEL, ND

DATE	JUL 17,80	AUG 20,80	SEP 25,80
TIME	0900	1022	1102
TOTAL CELLS/ML	440000	4700	5600
DIVERSITY: DIVISION	0.0	0.4	0.4
.CLASS	0.0	0.4	0.4
..ORDER	0.8	1.3	1.3
...FAMILY	0.8	1.3	1.4
....GENUS	0.9	1.3	1.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	*	0	90	2
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	*	0	39	1
....CHLORELLA	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	26	1	180	3
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	*	0	*	0
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	26	1	*	0
....MELOSIRA	--	-	--	-	--	-
..PENNALES						
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	140	3	*	0
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	110000#	25	2200#	47	2900#	52
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	5100	1	--	-	--	-
....APHANIZOMENON	320000#	73	2300#	48	2300#	41
...OSCILLATORIACEAE						
....PHORMIDIUM	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485439098154600 - LITTLE SOUTH PEMBINA RIVER BELOW LAKE CARMEL, ND

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, AIR (DEG C) (00020)	TEMPERATURE, WATER (DEG C) (00010)	COLOR (PLATINUM COBALT UNITS) (00080)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)
NOV 08...	1130	.22	980	8.1	-5.0	.0	25	5.2	13.1	99	1500
MAY 20...	1550	.33	890	8.5	--	21.0	30	6.9	9.2	106	>2000
JUN 20...	0905	.21	743	8.9	--	17.0	40	7.0	7.3	80	K15000
JUL 18...	0830	.25	772	7.9	--	20.0	50	2.9	3.5	40	>8000
AUG 19...	1550	.30	814	8.3	--	25.5	25	5.5	>10.2	132	9800
SEP 24...	1630	.41	849	8.3	--	8.0	30	6.4	11.1	101	7000

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
NOV 08...	67	39	60	20	100	47	2.9	110	7.9	340	130
MAY 20...	83	93	57	22	100	47	2.9	110	7.4	290	130
JUN 20...	370	71	36	18	110	58	3.7	120	6.6	260	120
JUL 18...	4200	5300	39	18	100	54	3.3	110	8.7	270	120
AUG 19...	620	66	49	18	100	51	3.1	110	7.3	240	130
SEP 24...	340	150	52	19	110	52	3.3	120	7.7	290	120

DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)
NOV 08...	18	.3	27	625	.02	.09	.00	.00	.02	.02	.03
MAY 20...	26	.3	20	563	.01	<.04	.00	.00	.01	.04	.05
JUN 20...	19	.3	17	506	.00	<.00	.01	.03	.01	.03	.04
JUL 18...	19	2.4	16	519	.00	.00	.01	.03	.00	.04	.05
AUG 19...	20	.3	23	502	.00	.00	.00	.00	.00	.00	.00
SEP 24...	23	.3	24	512	.00	.00	.00	.00	.00	.00	.00

K - Results based on colony count outside the acceptable range (non-ideal colony count).

PEMBINA RIVER BASIN

485439098154600 - LITTLE SOUTH PEMBINA RIVER BELOW LAKE CARMEL, ND

DATE	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOSPHORUS, HYDROLYZABLE TOTAL (MG/L AS P) (00669)	PHOSPHORUS, HYDROLYZABLE DISSOL. (MG/L AS P) (00672)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)
NOV 08...	1.1	1.1	1.1	3.7	.12	.37	.06	.03	320	270	10
MAY 20...	1.3	1.3	1.3	1.5	.28	.86	.03	.06	320	290	20
JUN 20...	.91	.94	.95	1.7	.38	1.2	--	--	300	330	20
JUL 18...	1.2	1.2	1.2	1.2	.61	1.9	.07	.04	350	140	20
AUG 19...	.54	.54	.54	.85	.36	1.1	.10	.04	430	210	30
SEP 24...	.78	.78	.78	.95	.28	.86	.04	.03	240	310	30

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	LENGTH OF EXPOSURE (DAYS) (00022)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS) (70950)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70958)
NOV 08...	380	300	44	2.0	5900	--	--	--	--	--	--
MAY 20...	500	430	12	.7	1700	--	--	--	--	--	--
JUN 20...	330	250	15	.4	1100	17.9	14.2	32	294	12.6	2.02
JUL 18...	370	290	12	.2	2400	10.2	8.66	29	101	15.3	2.47
AUG 19...	240	170	16	.8	28000	4.72	3.23	34	132	11.3	.500
SEP 24...	250	200	11	.4	630	13.3	11.3	37	172	11.6	2.52

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

485439098154600 - LITTLE SOUTH PEMBINA RIVER BELOW LAKE CARMEL, ND

DATE TIME	NOV 8,79 1130	MAY 20,80 1550	JUN 20,80 0905	JUL 18,80 0830	AUG 19,80 1550	SEP 24,80 1630
TOTAL CELLS/ML	5900	1700	1100	2400	28000	630
DIVERSITY: DIVISION	0.2	2.1	1.6	1.6	1.2	1.6
.CLASS	0.2	2.1	1.6	1.6	1.2	1.6
..ORDER	0.3	2.5	2.3	1.9	1.6	2.3
...FAMILY	0.3	2.9	2.4	2.3	1.6	2.3
....GENUS	0.3	3.1	3.1	2.8	2.2	2.3

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...MICRACTINIACEAE												
....GOLENKINIA	--	-	--	-	--	-	14	1	--	-	--	-
....MICRACTINIUM	--	-	52	3	--	-	28	1	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	--	-	170	10	--	-	110	5	1000	4	13	2
....CHODATELLA	--	-	--	-	--	-	14	1	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-	170	7	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	110	5	--	-	--	-
....SELENASTRUM	--	-	52	3	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	140	1	--	-
....TREUBARIA	--	-	--	-	--	-	14	1	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-	2300	8	--	-
...SCENEDESMACEAE												
....SCENEDESMUS	--	-	100	6	52	5	190	8	--	-	--	-
....TETRASTRUM	--	-	--	-	52	5	--	-	--	-	--	-
..OEDOGONIALES												
...OEDOGONIACEAE												
....OEDOGONIUM	--	-	--	-	26	2	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	150	3	120	7	52	5	55	2	280	1	65	10
...PHACOTACEAE												
....PTEROMONAS	--	-	13	1	--	-	--	-	280	1	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	5600#	96	230	13	52	5	1000#	43	3600	13	260#	41
....MELOSIRA	--	-	--	-	--	-	55	2	16000#	55	--	-
..PENNALES												
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	13	1	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	--	-	--	-	14	1	--	-	--	-
...NAVICULACEAE												
....NAVICULA	--	-	--	-	39	4	--	-	--	-	--	-
...NITZSCHIACEAE												
....NITZSCHIA	50	1	100	6	26	2	41	2	430	2	130#	20
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	39	2	13	1	--	-	--	-	26	4
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	78	4	13	1	--	-	--	-	13	2
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	630#	36	90	8	--	-	2300	8	--	-
..HORMOGONALES												
...NOSTOCACEAE												
....ANABAENA	--	-	--	-	360#	34	41	2	--	-	--	-
....APHANIZOMENON	--	-	--	-	230#	22	--	-	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	--	-	480#	20	2400	9	--	-
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	-	52	3	26	2	14	1	--	-	13	2
....TRACHELOMONAS	--	-	100	6	26	2	41	2	140	1	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	50	1	--	-	--	-	--	-	--	-	120#	18

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

484643097474500 - TONGUE RIVER ABOVE LAKE RENWICK NEAR AKRA, ND

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	COLOR (PLATINUM COBALT UNITS) (00080)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
NOV 09...	1055	2.8	637	7.7	.0	15	2.9	11.8	87	450	29
MAY 19...	1445	3.4	718	8.2	21.5	10	5.0	9.0	103	K14000	30
JUN 17...	1510	3.9	748	8.3	21.5	20	12	7.9	93	>8000	240
JUL 15...	1330	2.9	528	8.3	25.0	35	14	7.9	99	K26000	2100
AUG 18...	1305	21	615	8.2	16.5	15	26	8.6	92	K55000	900
SEP 23...	1240	46	658	8.1	8.5	30	84	9.9	87	K19000	K370

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA) (00933)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY (MG/L AS CACO3) (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
NOV 09...	K17	89	21	21	13	.5	28	6.8	280	57	8.8
MAY 19...	K110	88	22	29	17	.7	36	6.7	270	95	11
JUN 17...	540	89	22	39	21	1.0	48	8.7	260	140	15
JUL 15...	1500	61	18	24	18	.7	29	5.4	230	49	7.7
AUG 18...	1800	70	17	28	19	.8	34	5.9	210	96	10
SEP 23...	2600	73	19	37	23	1.0	45	7.5	230	100	15

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)
NOV 09...	.2	20	403	.04	.18	.00	.00	.04	.04	.05	.56
MAY 19...	.4	21	448	.01	<.04	.00	.00	.01	.01	.01	.74
JUN 17...	.4	27	500	.01	<.04	.01	.03	.02	.04	.05	.56
JUL 15...	.5	25	342	.02	.09	.01	.03	.03	.02	.03	1.1
AUG 18...	.3	25	420	.00	.00	.01	.03	.00	.00	.00	.69
SEP 23...	.3	27	412	.05	.22	.00	.00	.05	.13	.17	1.2

K - Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

484643097474500 - TONGUE RIVER ABOVE LAKE RENWICK NEAR AKRA, ND

DATE	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOSPHORUS, HYDROLYZABLE TOTAL (MG/L AS P) (00669)	PHOSPHORUS, HYDROLYZABLE DISSOL. (MG/L AS P) (00672)	BORON, DISSOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)
NOV 09...	.60	.64	.71	.08	.25	.03	.01	80	250	20	180
MAY 19...	.75	.76	1.1	.10	.31	.00	.03	100	210	<10	130
JUN 17...	.60	.62	1.2	.13	.40	--	--	120	430	<10	200
JUL 15...	1.1	1.1	1.3	.12	.37	.06	.03	80	510	20	190
AUG 18...	.69	.69	.94	.13	.40	.08	.05	160	1200	20	460
SEP 23...	1.3	1.4	1.7	.19	.58	.09	.02	90	2400	20	640

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED (MG/L AS C) (00689)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)	PERIPHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERIPHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	LENGTH OF EXPOSURE (DAYS) (00022)	BIOMASS CHLOROPHYLL RATIO PERIPHYTON (UNITS) (70950)	CHLOR-A PERIPHYTON CHROMOGRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERIPHYTON CHRUMOGRAPHIC FLUOROM (MG/M2) (70958)
NOV 09...	130	21	.2	740	--	--	--	--	--	--
MAY 19...	80	9.5	.4	630	--	--	--	--	--	--
JUN 17...	80	10	.3	2100	21.3	17.9	30	105	32.4	2.92
JUL 15...	60	12	.3	270000	5.12	4.25	29	91.2	9.54	.590
AUG 18...	60	41	.8	1100	6.30	5.04	35	124	10.2	1.54
SEP 23...	60	9.0	1.5	2400	--	--	--	--	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

484643097474500 - TONGUE RIVER ABOVE LAKE RENWICK NEAR AKRA, ND

DATE TIME	NOV 9,79 1055	MAY 19,80 1445	JUN 17,80 1510	JUL 15,80 1330	AUG 18,80 1305	SEP 25,80 1200
TOTAL CELLS/ML	740	630	2100	270000	1100	2400
DIVERSITY: DIVISION	1.7	1.0	1.6	0.0	1.7	1.0
.CLASS	1.7	1.0	1.6	0.0	1.7	1.0
..ORDER	1.9	1.2	2.5	0.0	2.1	1.0
...FAMILY	2.0	1.7	3.5	0.1	2.8	2.0
....GENUS	2.0	1.7	3.7	0.1	3.1	2.7

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHARACIACEAE												
....SCHROEDERIA	13	2	--	*	--	*	*	0	--	*	--	*
...MICRACTINIACEAE												
....MICRACTINIUM	--	*	--	*	230	11	--	*	--	*	50	2
...OOCYSTACEAE												
....ANKISTRODESMUS	--	*	26	4	65	3	*	0	26	2	16	1
....CHODATELLA	--	*	--	*	13	1	--	*	--	*	16	1
....DICTYOSPHAERIUM	--	*	--	*	100	5	--	*	210	19	--	*
....KIRCHNERIELLA	--	*	--	*	--	*	--	*	--	*	100	4
....OOCYSTIS	--	*	--	*	--	*	*	0	--	*	72	3
....SELENASTRUM	--	*	--	*	13	1	--	*	--	*	--	*
....TREUBARIA	--	*	--	*	--	*	--	*	13	1	--	*
...SCENEDESMACEAE												
....SCENEDESMUS	--	*	52	8	260	12	--	*	150	14	86	4
....TETRASTRUM	--	*	--	*	--	*	--	*	--	*	50	2
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	77	11	--	*	190	9	*	0	39	4	52	2
...PHACOTACEAE												
....PHACOTUS	--	*	--	*	26	1	--	*	--	*	--	*
....PTEROMONAS	--	*	--	*	--	*	--	*	13	1	--	*
...VOLVOCACEAE												
....PANDORINA	--	*	--	*	210	10	--	*	--	*	--	*
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...COSCINODISCACEAE												
....CYCLOTELLA	39	5	13	2	300	14	--	*	52	5	190	8
..PENNALES												
...ACHNANTHACEAE												
....RHOICOSPHENIA	--	*	--	*	--	*	--	*	13	1	--	*
...FRAGILARIACEAE												
....SYNEDRA	--	*	13	2	26	1	--	*	26	2	16	1
...NAVICULACEAE												
....CALONEIS	--	*	--	*	--	*	--	*	--	*	16	1
....NAVICULA	13	2	39	6	92	4	--	*	52	5	--	*
...NITZSCHIACEAE												
....NITZSCHIA	26	4	410	65	250	12	--	*	120	11	72	3
...SURIRELLACEAE												
....CYMATOPLEURA	--	*	--	*	13	1	--	*	--	*	--	*
....SURIRELLA	--	*	--	*	13	1	--	*	--	*	--	*
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	26	4	--	*	13	1	--	*	--	*	--	*
...CRYPTOMONADACEAE												
....CRYPTOMONAS	26	4	--	*	130	6	*	0	--	*	26	1
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	*	--	*	65	3	*	0	--	*	--	*
..HORMOGONALES												
...NOSTOCACEAE												
....APHANIZOMENON	--	*	--	*	--	*	270000	100	--	*	200	8
...OSCILLATORIACEAE												
....OSCILLATORIA	460	63	--	*	--	*	--	*	310	28	1400	58
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	--	*	--	*	65	3	*	0	39	4	26	1
....LEPOCINCLIS	--	*	--	*	--	*	--	*	--	*	16	1
....TRACHELOMONAS	39	5	77	12	39	2	--	*	13	1	100	4
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	13	2	--	*	--	*	*	0	--	*	--	*

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

484649097460000 - LAKE RENWICK (SHALLOW) NEAR AKRA, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)
NOV											
07...	1658	--	6.0	--	--	--	-1.5	--	15	25	--
07...	1659	.0	--	--	--	--	--	--	--	--	--
07...	1700	3.3	--	--	550	8.1	--	2.0	--	--	--
07...	1702	5.5	--	--	535	8.1	--	2.0	--	--	--
MAR											
12...	1416	--	17	11.53	--	--	-1.0	--	--	--	50.0
12...	1418	.0	--	--	--	--	--	--	--	--	--
12...	1420	3.3	--	--	671	7.7	--	--	--	--	--
12...	1430	6.6	--	--	688	7.6	--	1.5	--	--	--
12...	1435	13	--	--	695	7.5	--	1.5	--	--	--
12...	1500	16	--	--	696	7.5	--	2.0	--	--	--

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)
NOV											
07...	--	--	--	--	--	67	17	22	16	.6	29
07...	--	--	200	K4	45	--	--	--	--	--	--
07...	11.4	89	--	--	--	--	--	--	--	--	--
07...	10.2	80	--	--	--	--	--	--	--	--	--
MAR											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	3.0	22	--	--	--	--	--	--	--	--	--
12...	2.4	18	--	--	--	--	--	--	--	--	--
12...	.8	6	--	--	--	--	--	--	--	--	--
12...	1.2	9	--	--	--	--	--	--	--	--	--

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV										
07...	7.0	220	71	7.8	.2	6.1	351	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	.01	.04	.00
07...	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)
NOV										
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	.00	.01	.01	.01	.66	.67	.68	.98	.01	.03
07...	--	--	--	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DISSOL. (MG/L AS P) (00672)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)

PEMBINA RIVER BASIN

484649097460000 - LAKE RENWICK (SHALLOW) NEAR AKRA, ND

DATE	(00669)	(00672)	(01020)	(01045)	(01046)	(01055)	(01056)	(60050)	(70953)	(70954)
NOV										
07...	--	--	100	910	<10	550	360	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	.05	.01	--	--	--	--	--	2000	3.54	.000
07...	--	--	--	--	--	--	--	--	--	--
MAR										
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

484649097460000 - LAKE RENWICK (SHALLOW) NEAR AKRA, ND

DATE	NOV 7,79
TIME	1700
TOTAL CELLS/ML	2000
DIVERSITY: DIVISION	0.7
.CLASS	0.7
..ORDER	0.7
...FAMILY	0.8
....GENUS	0.8

ORGANISM	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...OOCYSTACEAE		
....SELENASTRUM	19	1
...SCENEDESMACEAE		
....SCENEDESMUS	38	2
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	57	3
CHRYSOPHYTA		
.BACILLARIOPHYCEAE		
..CENTRALES		
...COSCINODISCACEAE		
....CYCLOTELLA	1700#	88
CRYPTOPHYTA (CRYPTOMONADS)		
.CRYPTOPHYCEAE		
..CRYPTOMONADALES		
...CRYPTOCHRYSIDACEAE		
....CHROOMONAS	94	5
EUGLENOPHYTA (EUGLENOIDS)		
.EUGLENOPHYCEAE		
..EUGLENALES		
...EUGLENACEAE		
....TRACHELOMONAS	19	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

PEMBINA RIVER BASIN

484636097445500 - LAKE RENWICK (DEEP) NEAR AKRA, ND

DATE	TIME	SAMP-LING DEPTH (FT) (00003)	RESER-VOIR DEPTH (FEET) (72025)	RESER-VOIR ELEV-ATION (FEET ABOVE DATUM) (00062)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, AIR (DEG C) (00020)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)
NOV											
07...	1505	--	19	--	540	8.4	-1.5	2.0	20	4.6	32.0
07...	1506	.0	--	--	--	--	--	--	--	--	--
07...	1507	3.3	--	--	540	8.4	--	2.0	--	--	--
07...	1510	6.6	--	--	535	8.2	--	2.0	--	--	--
07...	1515	9.9	--	--	535	8.2	--	2.0	--	--	--
07...	1520	13	--	--	538	8.2	--	2.0	--	--	--
07...	1525	19	--	--	540	8.3	--	2.0	--	--	--
JAN											
15...	1439	--	19	13.45	--	--	1.0	--	20	1.6	86.0
15...	1440	.0	--	--	--	--	--	--	--	--	--
15...	1441	3.3	--	--	651	7.9	--	2.0	--	--	--
15...	1450	6.6	--	--	658	7.8	--	3.0	--	--	--
15...	1514	13	--	--	672	7.8	--	3.5	--	--	--
15...	1520	19	--	--	820	7.5	--	4.0	--	--	--
MAR											
12...	1418	--	--	--	--	--	--	--	20	5.5	--
12...	1419	.0	--	--	--	--	--	--	--	--	--
12...	1420	3.3	--	--	671	7.7	--	1.5	--	--	--
12...	1432	9.9	--	--	--	--	--	--	--	--	--
12...	1500	16	--	--	700	7.5	--	2.0	--	--	--
MAY											
20...	0938	--	20	14.42	--	--	25.0	--	15	7.2	36.0
20...	0939	.0	--	--	--	--	--	--	--	--	--
20...	0940	3.3	--	--	479	8.6	--	17.0	--	--	--
20...	0950	6.6	--	--	482	8.6	--	17.0	--	--	--
20...	1015	13	--	--	482	7.8	--	11.0	--	--	--
20...	1040	19	--	--	490	7.6	--	10.5	--	--	--
JUN											
18...	1123	--	20	12.27	502	8.5	17.0	20.0	25	8.0	30.0
18...	1124	.0	--	--	--	--	--	--	--	--	--
18...	1125	3.3	--	--	498	8.5	--	20.0	--	--	--
18...	1140	6.6	--	--	500	8.5	--	20.0	--	--	--
18...	1200	13	--	--	510	8.5	--	20.0	--	--	--
18...	1215	19	--	--	506	8.5	--	19.5	--	--	--
JUL											
16...	1000	--	20	12.13	482	8.5	21.0	24.0	40	5.2	36.0
16...	1001	.0	--	--	--	--	--	--	--	--	--
16...	1002	3.3	--	--	483	8.4	--	24.0	--	--	--
16...	1004	6.6	--	--	485	8.5	--	24.0	--	--	--
16...	1006	13	--	--	490	8.3	--	24.0	--	--	--
16...	1008	19	--	--	505	8.2	--	20.0	--	--	--
AUG											
19...	0943	--	19	11.85	460	8.4	23.0	--	15	6.2	32.0
19...	0944	.0	--	--	--	--	--	--	--	--	--
19...	0945	3.3	--	--	459	8.5	--	20.0	--	--	--
19...	0947	6.6	--	--	450	8.4	--	19.5	--	--	--
19...	0949	13	--	--	447	8.4	--	19.0	--	--	--
19...	0951	19	--	--	459	8.4	--	18.5	--	--	--
SEP											
24...	1018	--	20	11.17	561	8.4	9.0	--	20	6.8	32.0
24...	1019	.0	--	--	--	--	--	--	--	--	--
24...	1020	3.3	--	--	535	8.5	--	10.0	--	--	--
24...	1022	6.6	--	--	531	8.5	--	10.0	--	--	--
24...	1024	13	--	--	541	8.4	--	10.0	--	--	--
24...	1026	19	--	--	562	8.4	--	10.0	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

484636097445500 - LAKE RENWICK (DEEP) NEAR AKRA, ND

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)
NOV											
07...	--	--	--	--	--	61	16	23	18	.7	30
07...	--	--	180	K5	K19	--	--	--	--	--	--
07...	12.6	98	--	--	--	--	--	--	--	--	--
07...	12.6	98	--	--	--	--	--	--	--	--	--
07...	12.6	98	--	--	--	--	--	--	--	--	--
07...	12.4	97	--	--	--	--	--	--	--	--	--
07...	12.3	96	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	84	22	27	16	.7	34
15...	--	--	21	<1	K1	--	--	--	--	--	--
15...	10.4	77	--	--	--	--	--	--	--	--	--
15...	10.3	77	--	--	--	--	--	--	--	--	--
15...	8.0	61	--	--	--	--	--	--	--	--	--
15...	2.4	18	--	--	--	--	--	--	--	--	--
MAR											
12...	--	--	--	--	--	92	24	27	15	.6	34
12...	--	--	K3	<1	K1	--	--	--	--	--	--
12...	3.0	22	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	1.2	9	--	--	--	--	--	--	--	--	--
MAY											
20...	--	--	--	--	--	55	16	21	18	.6	27
20...	--	--	510	67	K3	--	--	--	--	--	--
20...	9.2	96	--	--	--	--	--	--	--	--	--
20...	8.6	90	--	--	--	--	--	--	--	--	--
20...	3.9	36	--	--	--	--	--	--	--	--	--
20...	.4	3	--	--	--	--	--	--	--	--	--
JUN											
18...	--	--	--	--	--	59	17	24	19	.7	31
18...	--	--	>2000	K16	21	--	--	--	--	--	--
18...	7.9	90	--	--	--	--	--	--	--	--	--
18...	7.9	--	--	--	--	--	--	--	--	--	--
18...	7.9	90	--	--	--	--	--	--	--	--	--
18...	7.2	81	--	--	--	--	--	--	--	--	--
JUL											
16...	--	--	--	--	--	47	16	23	21	.7	30
16...	--	--	K22000	44	26	--	--	--	--	--	--
16...	7.5	93	--	--	--	--	--	--	--	--	--
16...	6.7	83	--	--	--	--	--	--	--	--	--
16...	3.4	42	--	--	--	--	--	--	--	--	--
16...	1.1	13	--	--	--	--	--	--	--	--	--
AUG											
19...	--	--	--	--	--	45	16	24	22	.8	31
19...	--	--	>8000	K3	K13	--	--	--	--	--	--
19...	8.3	95	--	--	--	--	--	--	--	--	--
19...	7.6	87	--	--	--	--	--	--	--	--	--
19...	6.3	71	--	--	--	--	--	--	--	--	--
19...	4.3	47	--	--	--	--	--	--	--	--	--
SEP											
24...	--	--	--	--	--	60	18	26	20	.8	33
24...	--	--	K3800	78	170	--	--	--	--	--	--
24...	9.2	84	--	--	--	--	--	--	--	--	--
24...	9.2	84	--	--	--	--	--	--	--	--	--
24...	8.5	78	--	--	--	--	--	--	--	--	--
24...	3.4	31	--	--	--	--	--	--	--	--	--

K - Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

484636097445500 - LAKE RENWICK (DEEP) NEAR AKRA, ND

DATE	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)
NOV											
07...	6.7	200	78	7.4	.3	.6	333	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	.01	.04	.00	.00
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	.01	.04	.00	.00
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	7.0	270	86	9.5	.3	11	383	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	.15	.66	.02	.07
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	.07	.31	.06	.20
15...	--	--	--	--	--	--	--	.12	.53	.02	.07
MAR											
12...	6.6	290	85	9.5	.3	15	475	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	.44	1.9	.03	.10
12...	--	--	--	--	--	--	--	.41	1.8	.03	.10
12...	--	--	--	--	--	--	--	.33	1.5	.02	.07
MAY											
20...	6.2	170	62	8.1	.2	10	297	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	.00	<.00	.00	.00
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	.00	<.00	.00	.00
20...	--	--	--	--	--	--	--	.00	<.00	.00	.00
JUN											
18...	6.8	180	82	9.8	.3	11	329	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	.00	<.00	.01	.03
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	.00	.00	.01	.03
18...	--	--	--	--	--	--	--	.01	<.04	.01	.03
JUL											
16...	7.1	160	72	9.1	.6	8.5	323	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	.00	.00	.02	.07
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	.00	.00	.01	.03
16...	--	--	--	--	--	--	--	.00	.00	.02	.07
AUG											
19...	6.8	160	72	10	.3	7.1	285	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	.00	<.00	.01	.03
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	.00	<.00	.00	.00
19...	--	--	--	--	--	--	--	.00	<.00	.00	.00
SEP											
24...	7.0	190	79	10	.3	7.3	385	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	.00	.00	.00	.00
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	.00	.00	.00	.00
24...	--	--	--	--	--	--	--	.00	.00	.00	.00

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

484636097445500 - LAKE RENWICK (DEEP) NEAR AKRA, ND

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DISSOL. (MG/L AS P) (00672)
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	.01	.03	.04	.58	.61	.62	1.1	.00	.00	.02	.01
07...	--	--	--	--	--	--	--	--	--	--	--
07...	.01	.04	.05	.71	.75	.76	.96	.00	.00	.03	.00
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
JAN											
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	.17	.06	.08	.94	1.0	1.2	1.5	.03	.09	.02	.00
15...	--	--	--	--	--	--	--	--	--	--	--
15...	.13	.36	.46	.84	1.2	1.3	1.7	.00	.00	.01	.02
15...	.14	.54	.70	.86	1.4	1.5	1.9	.04	.12	.05	.00
MAR											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	.47	.51	.66	.16	.67	1.1	1.3	.04	.12	.01	.00
12...	.44	.22	.28	.67	.89	1.3	1.5	.04	.12	.01	.00
12...	.35	.41	.53	.69	1.1	1.5	1.4	.12	.37	.03	.00
MAY											
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	.00	.01	.01	.72	.73	.73	.89	.03	.09	.03	.00
20...	--	--	--	--	--	--	--	--	--	--	--
20...	.00	.01	.01	.59	.60	.60	1.4	.04	.12	.05	.00
20...	.00	.10	.13	.90	1.0	1.0	3.2	.06	.18	.11	.00
JUN											
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	.01	.09	.12	.73	.82	.83	1.1	.03	.09	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	.01	.06	.08	.64	.70	.71	1.2	.03	.09	--	--
18...	.02	.06	.08	.71	.77	.79	1.1	.05	.15	--	--
JUL											
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	.00	.02	.03	2.9	2.9	2.9	1.4	.00	.00	.03	.03
16...	--	--	--	--	--	--	--	--	--	--	--
16...	.00	.16	.21	.70	.86	.86	1.3	.02	.06	.04	.03
16...	.00	.68	.88	.52	1.2	1.2	2.2	.17	.52	.04	.02
AUG											
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	.00	.09	.12	.79	.88	.88	1.4	.02	.06	.05	.03
19...	--	--	--	--	--	--	--	--	--	--	--
19...	.00	.13	.17	.70	.83	.83	1.5	.02	.06	.03	.03
19...	.00	.14	.18	.82	.96	.96	1.4	.02	.06	.04	.02
SEP											
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	.00	.00	.00	.59	.59	.59	1.2	.04	.12	.04	.01
24...	--	--	--	--	--	--	--	--	--	--	--
24...	.00	.00	.00	1.1	1.1	1.1	1.1	.03	.09	.03	.01
24...	.00	.00	.00	.81	.81	.81	1.1	.03	.09	.04	.01

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

484636097445500 - LAKE RENWICK (DEEP) NEAR AKRA, ND

DATE	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
NOV										
07...	100	250	<10	490	290	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	3100	8.24	.000
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
JAN										
15...	130	140	<10	1300	1400	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	13	.5	4000	10.8	.000
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	12	.3	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
MAR										
12...	90	570	460	2200	2200	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	8.1	.1	2600	.030	.000
12...	--	--	--	--	--	8.1	.2	--	--	--
12...	--	--	--	--	--	7.2	.2	--	--	--
MAY										
20...	80	310	20	470	130	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	8.6	1.6	4000	2.86	.100
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	9.5	1.5	--	--	--
20...	--	--	--	--	--	12	2.2	--	--	--
JUN										
18...	80	370	30	600	450	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	11	1.1	36000	20.3	.470
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	6.3	1.2	--	--	--
18...	--	--	--	--	--	8.7	1.0	--	--	--
JUL										
16...	90	200	10	390	140	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	9.3	.9	2600	35.1	.000
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	13	.5	--	--	--
16...	--	--	--	--	--	11	.4	--	--	--
AUG										
19...	120	190	50	440	320	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	14	1.4	280000	22.5	1.63
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	34	1.0	--	--	--
19...	--	--	--	--	--	9.4	.8	--	--	--
SEP										
24...	70	460	10	300	170	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	13	.7	12000	21.5	.000
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	9.3	.9	--	--	--
24...	--	--	--	--	--	9.5	.7	--	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

484636097445500 - LAKE RENWICK (DEEP) NEAR AKRA, ND

DATE	NOV 7,79	JAN 15,80	MAR 12,80	MAY 20,80
TIME	1507	1441	1420	0940
TOTAL CELLS/ML	3100	4000	2600	4000
DIVERSITY: DIVISION	0.3	0.6	0.0	2.2
.CLASS	0.3	0.6	0.0	2.2
..ORDER	0.3	0.0	0.0	2.6
...FAMILY	0.3	0.0	0.0	3.0
....GENUS	0.3	0.0	0.0	3.5

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	--	-	100	3
....CHODATELLA	--	-	--	-	--	-	330	8
....OOCYSTIS	--	-	--	-	--	-	350	9
....SELENASTRUM	--	-	--	-	--	-	180	4
....TETRAEDRON	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	50	1
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	--	-	--	-	--	-	100	3
....TETRASTRUM	--	-	--	-	--	-	100	3
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	59	2	--	-	--	-	50	1
...PHACOTACEAE								
....PTEROMONAS	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	3000#	95	--	-	--	-	610#	15
....MELOSIRA	--	-	--	-	--	-	--	-
..PENNALES								
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	100	3
...NAVICULACEAE								
....NAVICULA	--	-	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	--	-	--	-	25	1
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	38	1	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE	--	-	150	4	--	-	--	-
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	13	1	450	11
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	3300#	84	--	-	130	3
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	--	-	400	10
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	--	-
....APHANIZOMENON	--	-	--	-	--	-	680#	17
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	2600#	99	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	88	3	--	-	--	-	350	9
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	460	12	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

PEMBINA RIVER BASIN

484636097445500 - LAKE RENWICK (DEEP) NEAR AKRA, ND

DATE	JUN 18,80	JUL 16,80	AUG 19,80	SEP 24,80
TIME	1125	1002	0945	1020
TOTAL CELLS/ML	36000	2600	280000	12000
DIVERSITY: DIVISION	0.5	1.6	0.3	1.1
.CLASS	0.5	1.6	0.3	1.1
..ORDER	0.6	1.8	0.4	1.3
...FAMILY	0.6	2.6	0.4	1.4
....GENUS	0.6	2.6	0.4	1.4

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	*	0	--	-	--	-	--	-
...HYDRODICTYACEAE								
....PEDIASTRUM	350	1	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	39	2	--	-	--	-
....CHODATELLA	--	-	--	-	--	-	--	-
....OOCYSTIS	300	1	--	-	*	0	*	0
....SELENASTRUM	--	-	--	-	*	0	--	-
....TETRAEDRON	--	-	--	-	--	-	*	0
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	--	-	750	6
....SCENEDESMUS	910	3	100	4	--	-	--	-
....TETRASTRUM	--	-	--	-	--		--	-
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	9500	3	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	*	0	91	4	*	0	--	-
...PHACOTACEAE								
....PTEROMONAS	--	-	13	1	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	*	0	52	2	*	0	2600#	21
....MELOSIRA	--	-	26	1	--	-	--	-
..PENNALES								
...FRAGILARIACEAE								
....SYNEDRA	*	0	39	2	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	180	7	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	320	13	--	-	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE	--	-	--	-	--	-	--	-
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	*	0	--	-	*	0	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	580	2	78	3	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	*	0	--	-	4500	2	500	4
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	310	12	--	-	--	-
....APHANIZOMENON	33000#	92	--	-	260000#	94	8200#	68
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	1200#	46	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	*	0	52	2	--	-	--	-
....PHACUS	*	0	--	-	--	-	--	-
....TRACHELOMONAS	300	1	39	2	--	-	62	1
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)

RED RIVER OF THE NORTH BASIN

05101000 TONGUE RIVER AT AKRA, ND

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	COLOR (PLAT-INUM COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)
OCT											
03...	1230	5.0	500	8.6	12.0	--	--	--	--	--	--
NOV											
09...	0910	4.8	529	8.3	1.5	25	5.5	13.2	102	370	K7
DEC											
18...	1315	4.9	622	--	4.0	--	--	--	--	--	--
JAN											
16...	0905	5.0	700	7.9	3.0	20	1.7	9.4	70	64	<1
31...	1125	4.2	708	--	3.0	--	--	--	--	--	--
MAR											
05...	1605	4.5	760	--	3.0	--	--	--	--	--	--
29...	0825	.14	672	--	4.0	--	--	--	--	--	--
APR											
09...	1615	74	364	--	1.5	--	--	--	--	--	--
16...	1350	19	330	7.9	5.0	--	--	--	--	--	--
MAY											
19...	1300	.12	565	7.7	18.5	15	4.8	10.3	111	83	K6
JUN											
17...	1245	.29	521	8.3	21.5	20	6.0	7.4	87	>2000	22
JUL											
15...	1210	.15	510	8.0	22.5	30	3.2	6.5	77	>8000	720
AUG											
18...	1555	12	460	8.4	20.5	15	5.2	8.4	97	K28000	K10
SEP											
23...	1630	57	531	8.5	11.5	--	--	10.2	97	7300	84

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT											
03...	--	59	18	24	19	.7	29	5.1	190	80	7.2
NOV											
09...	K17	62	16	23	18	.7	30	6.7	200	78	7.5
DEC											
18...	--	--	--	--	--	--	--	--	--	--	--
JAN											
16...	K3	87	23	28	16	.7	35	6.9	290	88	8.3
31...	--	--	--	--	--	--	--	--	--	--	--
MAR											
05...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
APR											
09...	--	--	--	--	--	--	--	--	--	--	--
16...	--	33	12	17	21	.6	21	3.9	111	47	6.2
MAY											
19...	26	71	20	18	13	.5	23	4.6	230	63	5.6
JUN											
17...	55	60	17	23	18	.7	30	6.5	190	70	8.4
JUL											
15...	230	62	19	21	16	.6	27	6.0	210	63	7.8
AUG											
18...	76	43	16	23	22	.8	30	6.8	160	70	9.6
SEP											
23...	170	58	17	25	20	.7	31	6.6	190	78	11

K - Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

RED RIVER OF THE NORTH BASIN

05101000 TONGUE RIVER AT AKRA, ND

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)
OCT 03...	.4	1.3	314	--	--	--	--	--	--	--	--
NOV 09...	.3	.6	347	.01	.04	.00	.00	.01	.05	.06	.77
JAN 16...	.3	12	437	.08	.35	.05	.16	.13	.29	.37	1.0
31...	--	--	--	--	--	--	--	--	--	--	--
APR 09...	--	--	--	--	--	--	--	--	--	--	--
16...	.1	12	190	1.0	4.5	--	--	--	--	--	--
MAY 19...	.3	15	342	.29	<1.3	.01	.03	.30	.16	.21	.14
JUN 17...	.3	12	334	.12	<.53	.01	.03	.13	.13	.17	.97
JUL 15...	.4	16	334	.28	1.2	.06	.20	.34	.33	.43	.87
AUG 18...	.3	6.7	293	.00	<.00	.01	.03	.00	.21	.27	.79
SEP 23...	.3	6.4	--	.00	.00	.00	.00	.00	.02	.03	.83

DATE	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS, ORTHOPH USPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH USPHATE DISSOL. (MG/L AS PO4) (00660)	PHOS-PHORUS, HYDRO-LYZABLE TOTAL (MG/L AS P) (00669)	PHOS-PHORUS, HYDRO-LYZABLE DISSOL. (MG/L AS P) (00672)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT 03...	--	--	--	--	--	--	--	0	--	80	--
NOV 09...	.82	.83	.88	.00	.00	.03	.00	100	210	<10	460
JAN 16...	1.3	1.4	1.5	.00	.00	.00	.04	130	140	<10	1800
31...	--	--	--	--	--	--	--	--	--	--	--
APR 09...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	.40	--	--	130	--	60	--
MAY 19...	.30	.60	1.1	.06	.18	.01	.01	60	270	20	1300
JUN 17...	1.1	1.2	2.0	.04	.12	--	--	80	290	20	720
JUL 15...	1.2	1.5	1.8	.03	.09	.08	.02	60	330	30	1400
AUG 18...	1.0	1.0	1.3	.02	.06	.07	.03	110	220	10	390
SEP 23...	.85	.85	1.1	.04	.12	--	--	70	--	20	--

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED (MG/L AS C) (00689)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	LENGTH OF EXPO-SURE (DAYS) (00022)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS) (70950)	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2) (70958)
OCT 03...	260	--	--	--	--	--	--	--	--	--
NOV 09...	280	15	.3	1800	--	--	--	--	--	--
DEC 18...	--	--	--	--	--	--	--	--	--	--
JAN 16...	1700	9.4	.3	3700	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
APR 09...	--	--	--	--	--	--	--	--	--	--
16...	280	--	--	--	--	--	--	--	--	--
MAY 19...	1300	17	.8	1300	--	--	--	--	--	--
JUN 17...	580	24	.6	3400	22.4	16.5	30	187	31.6	9.11
JUL 15...	1600	150	.7	260000	19.3	16.6	28	130	20.8	8.22
AUG 18...	270	20	1.1	170000	10.9	8.19	34	101	26.8	3.44
SEP 23...	--	8.0	.8	15000	21.0	17.7	37	165	20.0	6.50

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

RED RIVER OF THE NORTH BASIN

05101000 TONGUE RIVER AT AKRA, ND

DATE	NOV 9,79	JAN 16,80	MAY 19,80	JUN 17,80
TIME	0910	0905	1300	1245
TOTAL CELLS/ML	1800	3700	1300	3400
DIVERSITY: DIVISION	0.0	1.5	0.9	1.1
.CLASS	0.0	1.5	0.9	1.1
..ORDER	0.0	0.0	1.7	1.8
...FAMILY	0.0	0.0	2.8	2.0
....GENUS	0.0	0.0	3.0	2.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	39	1
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	--	-	26	1
....CHLORELLA	--	-	1900#	51	--	-	--	-
....KIRCHNERIELLA	--	-	35	1	--	-	--	-
....OOCYSTIS	--	-	--	-	26	2	180	5
....SELENASTRUM	--	-	--	-	13	1	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	--	-	180	14	130	4
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	35	1	13	1	*	0
..ZYGNEMATALES								
...DESMIDIACEAE								
....STAURASTRUM	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	1800#	100	110	3	430#	32	52	2
....MELOSIRA	--	-	--	-	52	4	--	-
..PENNALES								
...DIATOMACEAE								
....DIATOMA	--	-	--	-	52	4	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	52	4	--	-
....SYNEDRA	--	-	--	-	26	2	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	78	6	--	-
...NAVICULACEAE								
....NAVICULA	--	-	--	-	90	7	39	1
...NITZSCHIACEAE								
....NITZSCHIA	--	-	--	-	270#	20	39	1
...SURIRELLACEAE								
....SURIRELLA	--	-	--	-	13	1	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE	--	-	180	5	--	-	--	-
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	13	1	52	2
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	1200#	33	13	1	90	3
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	--	-	--	-	--	-	540#	16
..HORMOGONALES								
...NOSTOCACEAE								
....APHANIZOMENON	--	-	--	-	--	-	2100#	62
...OSCILLATORIACEAE								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	13	1	--	-
....PHACUS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	110	3	--	-	90	3
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	110	3	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

PHYTOPLANKTON ANALYSES, OCTOBER 1979 TO SEPTEMBER 1980

RED RIVER OF THE NORTH BASIN

05101000 TONGUE RIVER AT AKRA, ND

	JUL 15,80	AUG 18,80	SEP 23,80
DATE TIME	1210	1555	1630
TOTAL CELLS/ML	260000	170000	15000
DIVERSITY: DIVISION	0.1	0.3	1.0
.CLASS	0.1	0.3	1.0
..ORDER	0.1	0.4	1.8
...FAMILY	0.1	0.5	2.1
....GENUS	0.4	0.5	2.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	*	0	--	-
...HYDRODICTYACEAE						
....PEDIASTRUM	--	-	--	-	340	2
...OOCYSTACEAE						
....ANKISTRODESMUS	*	0	--	-	--	-
....CHLORELLA	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-
....OOCYSTIS	*	0	*	0	*	0
....SELENASTRUM	--	-	--	-	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	--	-	--	-
..TETRASPORALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	6600	4	250	2
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	*	0	*	0	*	0
..ZYGNEMATALES						
...DESMIDIACEAE						
....STAURASTRUM	*	0	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	*	0	*	0	25000#	17
....MELOSIRA	--	-	--	-	--	-
..PENNALES						
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....FRAGILARIA	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	--	-
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	*	0	--	-
...NITZSCHIACEAE						
....NITZSCHIA	*	0	--	-	*	0
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE	--	-	--	-	--	-
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	*	0	--	-	*	0
...CRYPTOMONADACEAE						
....CRYPTOMONAS	*	0	*	0	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	--	-	3000	2	74000#	49
..HORMOGONALES						
...NOSTOCACEAE						
....APHANIZOMENON	250000#	96	160000#	93	31000#	21
...OSCILLATORIACEAE						
....LYNGBYA	6600	2	--	-	--	-
....OSCILLATORIA	4200	2	1200	1	990	7
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	*	0
....PHACUS	--	-	--	-	*	0
....TRACHELOMONAS	*	0	--	-	120	1
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM, EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER [illegible] TO SEPTEMBER [illegible]

DATE	TIME	STREAM STAGE (FT ABOVE DATUM) (00065)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION, FROM TRUE NORTH (DEGREES) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)

[illegible] RIVER BASIN

[illegible] - [illegible]

DATE	TIME						
OCT [illegible]	[illegible]	--	--	--	--	--	--
APR [illegible]	[illegible]	--	[illegible]	--	--	--	--
MAY [illegible]	[illegible]	--	[illegible]	--	--	--	--
JUL [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (STANDARD UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
OCT [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--
APR [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	TIME	STREAM STAGE (FT ABOVE DATUM) (00065)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION, FROM TRUE NORTH (DEGREES) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)

[illegible] - [illegible]

DATE	TIME						
OCT [illegible]	[illegible]	--	[illegible]	--	--	--	--
APR [illegible]	[illegible]	--	[illegible]	--	--	--	--
MAY [illegible]	[illegible]	--	[illegible]	--	--	--	--
JUL [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (STANDARD UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
OCT [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--
APR [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM STAGE (FT ABOVE DATUM) (00065)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)
			GRAND RIVER BASIN				
			0635[illegible] - ALKALI CREEK NEAR BOWMAN, ND				
OCT 15...	1600	--	16.0	--	--	--	--
APR 10...	1500	--	14.0	--	--	--	--
MAY 08...	1115	--	12.5	--	--	--	--
JUL 10...	1120	2.00	30.0	50	135	5.0	687
AUG 07...	1050	1.99	22.0	0	315	5.0	689

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
OCT 15...	.12	2550	8.5	10.0	--	--
APR 10...	.83	3190	8.7	7.5	11.8	108
MAY 08...	.18	4490	8.6	13.0	9.0	88
JUL 10...	.09	4120	8.9	26.5	8.9	120
AUG 07...	.05	3680	9.0	19.5	8.1	94

DATE	TIME	[illegible]	STREAM STAGE (FT ABOVE DATUM) (00065)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)	BAROMETRIC PRESSURE (MM OF HG) (00025)	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)
						[illegible]						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)

GRAND RIVER BASIN

06899000 - NORTH FORK GRAND RIVER AT HALEY, MO

DATE												
OCT												
09...	9.9	--	--	--	--	--	--	--	--	--	--	--
NOV												
09...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
09...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
16...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
13...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
26...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
03...	--	--	210	0	48	27	270	72	8.1	4.1	420	0
11...	11.2	98	--	--	--	--	--	--	--	--	--	--
MAY												
09...	8.8	103	--	--	--	--	--	--	--	--	--	--
JUN												
09...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
10...	8.2	118	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
08...	8.3	108	200	0	56	11	480	79	11	11	470	0
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCT												
09...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
09...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
09...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
16...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
13...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
26...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
03...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
09...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
10...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
08...	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP												
09...	--	--	--	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT PARTIAL-RECORD SURFACE-WATER QUALITY STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

GRAND RIVER BASIN

455913103150000 - BOWMAN-HALEY LAKE NEAR HALEY, ND

DATE	TIME	SAMPLING DEPTH (FT) (00003)	RESERVOIR DEPTH (FEET) (72025)	RESERVOIR ELEVATION (FEET ABOVE DATUM) (00062)	TEMPERATURE, AIR (DEG C) (00020)	CLOUD COVER (PERCENT) (00032)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND VELOCITY (MILES PER HOUR) (00035)
OCT								
[illegible]...	[illegible]	--	--	--	--	--	--	--
JAN								
16...	1130	--	--	--	[illegible]	--	--	--
MAR								
13...	[illegible]	--	--	--	[illegible]	--	--	--
JUN								
[illegible]...	1130	--	--	--	[illegible]	--	--	--
JUL								
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--
AUG								
[illegible]...	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--
[illegible]...	[illegible]	[illegible]	--	--	--	--	--	--

DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OCT							
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JAN							
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAR							
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUN							
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL							
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AUG							
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05051500 - RED RIVER OF THE NORTH AT WAHPETON, ND (LAT 46 15 55 LONG 096 35 40)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
APR , 1980											
03...	1900	1030	670	7.9	.5	220	43	65	20	12	10
AUG											
14...	0955	120	650	8.3	22.0	280	21	59	30	13	11

05051600 - WILD RICE RIVER NR RUTLAND, ND (LAT 46 01 20 LONG 097 30 40)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
MAR , 1980											
26...	1500	93	520	7.6	2.5	210	97	46	23	17	14
MAY											
16...	1540	.12	1100	8.5	18.0	500	200	100	61	71	23

05054000 - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
APR , 1980											
03...	1520	8370	520	7.0	1.5	190	16	57	20	8.9	11
AUG											
12...	0930	196	680	8.5	22.0	210	9	59	30	18	15

[illegible]

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
APR , 1980											
[illegible]	1500	220	690	7.0	.5	190	0	[illegible]	[illegible]	63	[illegible]
SEP											
[illegible]	1455	40	870	8.5	11.0	250	0	[illegible]	[illegible]	100	[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
05051500 - RED RIVER OF THE NORTH AT WAHPETON, ND (LAT 46 15 55 LONG 096 35 46)											
APR , 1980 03...	.4	5.2	154	0	126	7.8	110	8.0	.1	12	303
AUG 14...	.4	2.6	244	0	200	2.0	66	7.6	.2	7.9	252
05051600 - WILD RICE RIVER NR RUTLAND, ND (LAT 46 01 20 LONG 097 30 40)											
MAR , 1980 26...	.5	9.0	137	0	112	8.7	102	6.6	.1	11	332
MAY 14...	1.0	15	343	0	281	1.7	340	33	.2	2.5	869
[illegible] - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)											
APR , 1980 03...	.3	5.5	163	0	134	6.6	29	7.6	.1	8.9	166
AUG 12...	.4	3.7	243	0	199	1.2	35	8.7	.2	7.8	256
[illegible]											
APR , 1980 [illegible]	1.4	7.2	183	0	150	3.7	88	11	.1	11	326
SEP 25...	3.3	8.9	436	0	358	2.2	131	22	.2	14	633
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05051500 - RED RIVER OF THE NORTH AT WAHPETON, ND (LAT 46 15 55 LONG 096 35 40)

DATE										
APR , 1980 03...	299	.41	954	3.6	--	--	1.1	230	60	100
AUG 14...	265	.36	87.1	.70	--	--	.24	5	20	10

05051600 - WILD RICE RIVER NR RUTLAND, ND (LAT 46 01 20 LONG 097 30 40)

DATE										
MAR , 1980 26...	321	.65	83.6	1.5	--	--	.05	130	90	80
MAY 14...	793	1.10	.28	1.0	--	--	.50	71	20	60

05054000 - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)

DATE										
APR , 1980 03...	191	.27	1960	2.0	--	--	.92	320	110	120
AUG 12...	256	.35	183	1.0	--	--	.11	94	20	9

[illegible]

DATE										
APR , 1980 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PECENT (0932)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05062500 - RUSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 56)

DATE	TIME										
MAR., 1980											
28...	1451	59	474	7.7	.5	203	56	44	22	17	
MAY											
13...	1745	1.6	1540	8.1	13.0	630	260	150	62	110	

05066500 - GOOSE RIVER AT HILLSBORO, ND (LAT 47 24 20 LONG 097 03 40)

DATE	TIME										
OCT., 1979											
24...	1515	1.0	1575	8.3	12.0	650	350	140	73	120	
APR., 1980											
28...	1445	300	632	7.8	4.0	260	130	63	27	23	
JUL											
10...	1125	.60	1340	8.1	26.0	510	250	110	57	170	

05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 34 LONG 097 03 16)

DATE	TIME										
APR., 1980											
07...	1445	21500	360	7.7	1.5	160	21	34	18	8.	

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
05060500 - RUSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 50)											
MAR , 1980											
28...	.5	10	176	0	144	5.6	91	5.8	.1	13	350
MAY											
13...	1.9	15	656	0	538	5.0	660	50	.0	7.4	1150
05066500 - GOOSE RIVER AT HILLSBORO, ND (LAT 47 24 20 LONG 097 03 40)											
OCT , 1979											
08...	2.9	9.2	371	0	304	3.0	460	100	.3	10	1160
APR , 1980											
08...	.6	9.2	190	0	156	6.1	170	16	.1	14	433
JUL											
16...	1.9	9.0	336	0	276	6.3	350	87	.3	22	955
05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 36 LONG 097 03 10)											
APR , 1980											
07...	.3	7.6	168	0	138	5.4	81	5.5	.1	11	262
05083600 - MIDDLE BRANCH FOREST RIVER NR WHITMAN, ND (LAT 48 16 50 LONG 098 07 50)											
APR , 1980											
08...	1.4	5.1	183	0	150	8.2	150	16	.1	8.9	362
JUN											
09...	2.1	4.6	220	0	180	0.6	260	31	.2	26	685
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05060500 - RUSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 50)

DATE	70301	70303	70302	71851	00631	00671	00660	01020	01046	01056
MAR , 1980										
28...	290	.09	57.0	1.5	--	--	.72	130	120	190
MAY										
13...	1070	1.56	4.35	1.0	--	--	.67	130	60	100

05066500 - GOOSE RIVER AT HILLSBORO, ND (LAT 47 24 20 LONG 097 03 40)

DATE	70301	70303	70302	71851	00631	00671	00660	01020	01046	01056
OCT , 1979										
04...	1100	1.55	5.05	--	--	--	--	360	20	220
APR , 1980										
08...	406	.59	351	3.3	--	--	.69	160	60	270
JUL										
16...	952	1.30	1.20	.80	--	--	.86	270	20	600

05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 30 LONG 097 03 10)

DATE	70301	70303	70302	71851	00631	00671	00660	01020	01046	01056
APR , 1980										
07...	214	.33	--	5.0	--	--	.56	130	130	70

[illegible] - MIDDLE BRANCH FOREST RIVER NR WHITMAN, ND (LAT 48 [illegible] LONG [illegible])

DATE	70301	70303	70302	71851	00631	00671	00660	01020	01046	01056
APR , 1980										
[illegible]	272	.37	9.25	4.1	--	--	.25	60	60	120
JUN										
[illegible]	652	.93	.09	1.6	--	--	.15	180	90	130

[illegible] - FOREST RIVER NR FORDVILLE, ND (LAT 48 [illegible] LONG [illegible])

DATE	70301	70303	70302	71851	00631	00671	00660	01020	01046	01056
APR , 1980										
[illegible]	308	.44	61.5	5.3	--	--	.41	160	70	[illegible]
SEP										
[illegible]	626	.58	7.44	1.6	--	--	.24	[illegible]	30	270

[illegible] - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, ND (LAT 48 [illegible] LONG [illegible])

DATE	70301	70303	70302	71851	00631	00671	00660	01020	01046	01056
APR , 1980										
[illegible]	298	.34	55.6	4.6	--	--	.78	160	70	[illegible]
[illegible]										
[illegible]	396	.47	1.58	1.6	--	--	.58	180	20	170

[illegible]

DATE	70301	70303	70302	71851	00631	00671	00660	01020	01046	01056
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	[illegible]	[illegible]	[illegible]
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE	70301	70303	70302	71851	00631	00671	00660	01020	01046	01056
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	[illegible]	[illegible]	[illegible]
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE	70301	70303	70302	71851	00631	00671	00660	01020	01046	01056
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--	[illegible]	[illegible]	[illegible]
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
483209097383300 - NORTH BRANCH PARK RIVER AB HOOPLE, ND (LAT 48 32 09 LONG 097 38 33)											
JUN , 1980											
11...	1720	1.1	870	8.3	24.0	350	71	86	33	91	43
483216097380300 - NORTH BRANCH PARK RIVER AT HOOPLE, ND (LAT 48 32 16 LONG 097 38 03)											
JUN , 1980											
11...	1900	.08	6000	8.1	20.0	1800	770	280	153	920	48
483139097423400 - CART CREEK AB CRYSTAL, ND (LAT 48 31 39 LONG 097 42 34)											
JUN , 1980											
10...	1915	.00	920	7.8	10.0	360	60	89	34	54	25
483226097351600 - CART CREEK AB HOOPLE, ND (LAT 48 32 26 LONG 097 35 16)											
JUN , 1980											
10...	0730	.00	1320	7.9	10.5	340	53	88	33	130	30
05090000 - PARK RIVER AT GRAFTON, ND (LAT 48 25 [illegible] LONG 097 [illegible])											
APR , 1980											
08...	1500	394	694	7.9	2.5	163	51	58	16	29	27
SEP											
09...	1700	4.2	1480	8.3	17.0	390	170	91	44	150	44
[illegible] - RED RIVER OF THE NORTH AT DRAYTON, ND (LAT 48 [illegible] LONG 097 [illegible])											
APR , 1980											
07...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP											
10...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] - PEMBINA COUNTY DRAIN [illegible]											
APR , 1980											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
APR , 1980											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
APR , 1980											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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APR , 1980											
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

483209097383300 - NORTH BRANCH PARK RIVER AB HOOPLE, ND (LAT 48 32 09 LONG 097 38 33)

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
JUN , 1980											
11...	1.2	12	--	--	280	--	160	29	.4	9.5	942

483216097380300 - NORTH BRANCH PARK RIVER AT HOOPLE, ND (LAT 48 32 16 LONG 097 38 03)

DATE											
JUN , 1980											
11...	12	16	--	--	260	--	370	1700	.3	20	2950

483639097423600 - CART CREEK AB CRYSTAL, ND (LAT 48 36 39 LONG 097 42 36)

DATE											
JUN , 1980											
12...	1.5	11	--	--	300	--	160	28	.3	18	584

483236097351600 - CART CREEK AB HOOPLE, ND (LAT 48 32 36 LONG 097 35 16)

DATE											
JUN , 1980											
12...	2.4	10	--	--	292	--	150	100	.1	20	688

05090000 - PARK RIVER AT GRAFTON, ND (LAT 48 25 24 LONG 097 24 30)

DATE											
[illegible]											
[illegible]	1.0	7.0	130	0	110	2.7	85	22	.1	13	310
[illegible]											
[illegible]	[illegible]	[illegible]	288	6	240	[illegible]	250	[illegible]	.3	18	683

[illegible] - RED RIVER OF THE NORTH AT DRAYTON, ND [illegible]

DATE											
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]

DATE											
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[illegible]

DATE											
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE											
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE											
[illegible]											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

483209097363300 - NORTH BRANCH PARK RIVER AB HOOPLE, ND (LAT 48 32 09 LONG 097 38 33)

DATE										
JUN , 1980										
11...	550	.76	1.67	--	--	--	--	100	20	100

483216097380300 - NORTH BRANCH PARK RIVER AT HOOPLE, ND (LAT 48 32 16 LONG 097 38 03)

DATE										
JUN , 1980										
11...	3520	4.83	5.66	--	--	--	--	910	50	1000

483629097423600 - CART CREEK AB CRYSTAL, ND (LAT 48 36 29 LONG 097 42 36)

DATE										
JUN , 1980										
12...	572	.81	.06	--	--	--	--	190	60	1200

483236097351600 - CART CREEK AB HOOPLE, ND (LAT 48 32 36 LONG 097 35 16)

DATE										
JUN , 1980										
12...	672	.93	.03	--	--	--	--	210	10	200

[illegible] - PARK RIVER AT GRAFTON, ND (LAT [illegible] LONG [illegible])

DATE										
APR , 1980										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
SEP										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] - RED RIVER OF THE NORTH AT DRAYTON, ND (LAT [illegible] LONG [illegible])

DATE										
APR , 1980										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
SEP										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] - PEMBINA COUNTY DRAIN [illegible] (LAT [illegible] LONG [illegible])

DATE										
APR , 1980										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
SEP										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE										
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE										
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DATE										
[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
PART 5. HUDSON BAY BASIN											
RED RIVER OF THE NORTH BASIN											
[illegible] - PEMBINA RIVER AT NECHE, ND [illegible]											
APR , 1980											
16...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SEP											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] - LONG CREEK NR NOONAN, ND [illegible]											
APR , 1980											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUN											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUL											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] - SOURIS RIVER ABOVE MINOT, ND [illegible]											
OCT , 1979											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUN , 1980											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] - SOURIS RIVER NR BANTRY, ND [illegible]											
OCT , 1979											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
JUN , 1980											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
JUN , 1980											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] - BOUNDARY CREEK NR LANDA, ND [illegible]											
[illegible] , 1980											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PART 6. MISSOURI RIVER BASIN											
LITTLE MUDDY RIVER BASIN											
[illegible] - LITTLE MUDDY RIVER [illegible] NR WILLISTON, ND [illegible]											
APR , 1980											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAY											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] RIVER BASIN											
[illegible]											
MAY , 1980											
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]											
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DATE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05100000 - PEMBINA RIVER AT NECHE, ND (LAT 48 59 20 LONG 097 33 05)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR , 1980										
16...	420	.63	250	3.6	--	--	.32	160	40	30
SEP										
10...	556	.75	10.4	1.0	--	--	.15	150	20	290

05113600 - LONG CREEK NR NOONAN, ND (LAT 48 58 52 LONG 103 04 34)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR , 1980										
02...	916	1.25	91.9	2.5	--	--	.22	0	80	330
JUN										
05...	1320	1.85	.73	1.0	--	--	.07	70	60	150
JUL										
08...	1270	1.75	.11	1.0	--	--	.23	0	10	90

05117500 - SOURIS RIVER ABOVE MINOT, ND (LAT 48 14 45 LONG 101 22 15)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT , 1979										
05...	783	1.13	115	--	--	--	1.3	260	0	100
JUN , 1980										
03...	827	1.16	13.6	1.0	--	--	.24	30	10	910
03...	831	1.14	13.3	--	--	--	--	150	<10	760

05122000 - SOURIS RIVER NR BANTRY, ND (LAT 48 30 20 LONG 100 26 04)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT , 1979										
03...	774	1.08	109	--	--	--	1.0	360	0	0
03...	774	1.09	110	--	.01	--	--	220	<10	30
JUN , 1980										
30...	741	1.01	--	1.0	--	--	.92	0	10	80

05123700 - CUT BANK CREEK AT N LAKE OUTLET NR GRANVILLE, ND (LAT 48 23 10 LONG 100 46 00)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
JUN , 1980										
03...	730	1.05	.19	1.0	--	--	2.0	0	90	80

05123900 - BOUNDARY CREEK NR LANDA, ND (LAT 48 48 46 LONG 100 51 46)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP , 1980										
03...	276	.37	.12	1.0	--	--	.51	120	90	30

PART 6. MISSOURI RIVER BASIN

LITTLE MUDDY RIVER BASIN

06331000 - LITTLE MUDDY RIVER BL COW CREEK NR WILLISTON, ND (LAT 48 17 04 LONG 103 34 21)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR , 1980										
03...	1010	1.39	68.8	1.0	--	--	.01	290	100	110
AUG										
07...	1540	2.11	23.0	1.0	--	--	.28	240	20	0

TOBACCO GARDEN CREEK BASIN

06331680 - TOBACCO GARDEN CREEK NR WATFORD CITY, ND (LAT 47 59 33 LONG 103 09 57)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR , 1980										
31...	1030	1.41	34.8	1.0	--	--	.17	160	1300	110
JUL										
10...	2140	2.88	2.46	1.0	--	--	.00	410	10	0

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 6. MISSOURI RIVER BASIN

SHELL CREEK BASIN

06332520 - SHELL CREEK NR PARSHALL, ND (LAT 48 03 11 LONG 102 08 10)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
APR , 1980											
04...	1050	9.9	1650	8.2	1.0	180	0	30	26	330	79
JUL											
07...	1330	.49	3020	E8.9	25.0	240	0	23	44	710	86

LITTLE MISSOURI RIVER BASIN

06335500 - LITTLE MISSOURI RIVER AT MARMARTH, ND (LAT 46 17 44 LONG 103 55 06)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT , 1979											
03...	1240	10	2150	E8.4	9.5	250	0	45	33	410	78
JUN , 1980											
05...	1315	3.8	2940	8.4	28.0	260	0	40	39	610	83
SEP											
10...	1200	3.6	2910	8.9	20.0	160	0	27	23	650	89

KNIFE RIVER BASIN

06339490 - ELM CREEK NR GOLDEN VALLEY, ND (LAT 47 06 25 LONG 102 03 05)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
JUN , 1980											
24...	1100	E.01	2500	8.7	19.5	310	0	54	43	530	78

06339500 - KNIFE RIVER NR GOLDEN VALLEY, ND (LAT 47 09 40 LONG 102 03 39)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
APR , 1980											
01...	1320	78	1410	8.3	1.0	180	0	34	23	230	72
MAY											
22...	1205	6.2	2150	8.2	23.0	310	0	54	43	420	74
JUN											
14...	1140	1410	700	7.8	19.5	140	0	26	18	110	62

PAINTED WOODS CREEK BASIN

06341800 - PAINTED WOODS CREEK NR WILTON, ND (LAT 47 16 30 LONG 100 47 30)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
JUN , 1980											
06...	1300	138	820	6.7	20.0	220	50	35	32	110	51
AUG											
25...	1450	1.6	1200	8.2	20.0	230	0	34	35	190	63

SQUARE BUTTE CREEK BASIN

06342260 - SQUARE BUTTE CREEK BELOW CENTER, ND (LAT 47 03 25 LONG 101 11 35)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
MAY , 1980											
27...	1240	1.5	1300	7.8	22.5	390	29	85	43	180	50
JUN											
26...	1400	6.4	1500	7.8	21.0	430	170	85	53	210	51

BURNT CREEK BASIN

06342450 - BURNT CREEK NR BISMARCK, ND (LAT 46 54 54 LONG 100 48 48)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
JUN , 1980											
06...	1545	3.2	900	7.5	20.0	290	7	50	40	100	42
SEP											
02...	1140	.55	1100	8.3	14.5	340	0	47	54	130	45

E - Estimated

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
PART 6. MISSOURI RIVER BASIN											
SHELL CREEK BASIN											
06332520 - SHELL CREEK NR PARSHALL, ND (LAT 48 03 11 LONG 102 08 10)											
APR , 1980 04...	11	8.8	476	0	390	4.8	500	10	.3	15	1140
JUL 07...	20	7.9	797	93	809	--	930	11	.3	3.9	2210
LITTLE MISSOURI RIVER BASIN											
06335500 - LITTLE MISSOURI RIVER AT MARMARTH, ND (LAT 46 17 44 LONG 103 55 06)											
OCT , 1979 03...	11	8.1	456	4	381	--	730	14	.4	4.2	1500
JUN , 1980 05...	16	12	528	5	441	3.4	1100	24	.4	5.2	2110
SEP 10...	22	10	673	20	585	1.4	970	22	.5	5.8	1920
KNIFE RIVER BASIN											
06339490 - ELM CREEK NR GOLDEN VALLEY, ND (LAT 47 06 25 LONG 102 03 05)											
JUN , 1980 24...	13	16	699	0	573	2.2	860	14	.4	5.7	1900
06339500 - KNIFE RIVER NR GOLDEN VALLEY, ND (LAT 47 09 40 LONG 102 03 39)											
APR , 1980 01...	7.5	9.0	312	0	256	2.5	420	7.7	.4	3.9	913
MAY 22...	10	9.4	667	0	547	6.7	660	9.0	.6	6.9	1560
JUN 14...	4.1	7.1	218	0	179	5.5	200	3.4	.3	6.7	465
PAINTED WOODS CREEK BASIN											
06341800 - PAINTED WOODS CREEK NR WILTON, ND (LAT 47 16 30 LONG 100 47 30)											
JUN , 1980 06...	3.2	7.5	206	0	169	66	290	6.0	.2	8.2	580
AUG 25...	5.5	9.9	396	0	325	4.0	300	12	.2	9.8	799
SQUARE BUTTE CREEK BASIN											
06342260 - SQUARE BUTTE CREEK BELOW CENTER, ND (LAT 47 03 25 LONG 101 11 35)											
MAY , 1980 27...	4.0	5.1	439	0	360	11	420	9.2	.4	16	951
JUN 26...	4.4	11	315	0	258	8.0	620	11	.6	7.9	1150
BURNT CREEK BASIN											
06342450 - BURNT CREEK NR BISMARCK, ND (LAT 46 54 54 LONG 100 48 48)											
JUN , 1980 06...	2.6	6.4	345	0	283	17	230	6.6	.3	6.7	593
SEP 02...	3.1	6.7	434	0	356	3.5	280	5.8	.2	8.3	750

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 6. MISSOURI RIVER BASIN

SHELL CREEK BASIN

06332520 - SHELL CREEK NR PARSHALL, ND (LAT 48 03 11 LONG 102 08 10)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR , 1980 04...	1160	1.55	30.5	1.0	--	--	.31	290	200	110
JUL 07...	2220	3.01	2.92	1.0	--	--	.05	260	30	20

LITTLE MISSOURI RIVER BASIN

06335500 - LITTLE MISSOURI RIVER AT MARMARTH, ND (LAT 46 17 44 LONG 103 55 06)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT , 1979 03...	1470	2.04	40.5	--	--	--	.00	260	100	0
JUN , 1980 09...	2100	2.87	21.6	1.0	--	--	.01	260	80	10
SEP 10...	2060	2.61	18.7	1.0	--	--	.03	610	50	10

KNIFE RIVER BASIN

06339490 - ELM CREEK NR GOLDEN VALLEY, ND (LAT 47 06 25 LONG 102 03 05)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
JUN , 1980 24...	1870	2.58	--	1.0	--	--	.26	0	10	60

06339500 - KNIFE RIVER NR GOLDEN VALLEY, ND (LAT 47 09 40 LONG 102 03 39)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
APR , 1980 01...	883	1.24	192	1.0	--	--	.08	130	130	50
MAY 22...	1530	2.12	26.3	1.0	--	--	.00	260	40	20
JUN 14...	481	.63	1770	2.0	--	--	.09	0	50	10

PAINTED WOODS CREEK BASIN

06341800 - PAINTED WOODS CREEK NR WILTON, ND (LAT 47 16 30 LONG 100 47 30)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
JUN , 1980 06...	592	.79	216	1.0	--	--	.10	230	370	30
AUG 25...	787	1.09	3.45	1.0	--	--	.17	60	150	40

SQUARE BUTTE CREEK BASIN

06342260 - SQUARE BUTTE CREEK BELOW CENTER, ND (LAT 47 03 25 LONG 101 11 35)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAY , 1980 27...	977	1.29	3.85	1.0	--	--	.00	430	180	150
JUN 26...	1160	1.56	19.9	1.0	--	--	.03	1500	0	60

BURNT CREEK BASIN

06342450 - BURNT CREEK NR BISMARCK, ND (LAT 46 54 54 LONG 100 48 48)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
JUN , 1980 06...	611	.81	5.12	1.0	--	--	.00	300	70	20
SEP 02...	746	1.02	1.11	.30	--	--	.04	60	40	0

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06345500 - HEART RIVER NR RICHARDTON, ND (LAT 46 44 46 LONG 102 18 27)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
JUN , 1980											
16...	1430	191	1680	8.3	20.0	420	120	83	52	230	54
AUG											
04...	1455	.33	1750	8.4	16.5	400	70	69	55	240	56

06348000 - HEART RIVER NR LARK, ND (LAT 46 36 37 LONG 101 22 54)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
MAY , 1980											
30...	1125	59	1220	7.8	18.0	350	74	65	46	170	51
JUL											
22...	1045	82	1100	8.6	24.0	320	58	60	41	170	53

CANNONBALL RIVER BASIN

06351000 - CANNONBALL RIVER BELOW BENTLEY, ND (LAT 46 21 30 LONG 102 02 30)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
JUN , 1980											
03...	1040	418	1320	8.2	13.5	300	82	50	42	190	57
JUL											
08...	1110	3.9	1520	8.2	21.5	440	130	84	56	190	48

06351680 - WHITE BUTTE FORK CEDAR CREEK NR SCRANTON, ND (LAT 46 19 20 LONG 102 59 45)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
JUN , 1980											
05...	1820	.01	4810	8.2	24.5	1800	1400	240	290	710	49

06352000 - CEDAR CREEK NR HAYNES, ND (LAT 46 09 15 LONG 102 28 25)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
JUN , 1980											
04...	1130	6.6	2170	8.3	19.5	490	56	74	74	350	60
JUL											
08...	1810	1.0	1820	8.3	22.0	520	180	87	74	240	49

06353000 - CEDAR CREEK NR RALEIGH, ND (LAT 46 05 00 LONG 101 20 00)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
MAY , 1980											
29...	1125	2.9	2000	7.9	19.0	460	120	99	52	340	61
JUL											
07...	1330	8.0	1600	8.5	27.0	460	200	83	61	230	52

JAMES RIVER BASIN

06467600 - JAMES RIVER NR MANFRED, ND (LAT 47 38 40 LONG 099 49 40)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
JUN , 1980											
12...	1735	68	540	8.0	25.0	190	0	39	23	46	33
SEP											
12...	1515	3.3	825	7.9	15.5	260	0	50	33	100	45

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06345500 - HEART RIVER NR RICHARDTON, ND (LAT 46 44 46 LONG 102 18 27)

DATE	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
JUN , 1980 16...	4.9	9.2	364	0	299	2.9	600	18	.4	9.0	1210
AUG 04...	5.2	10	401	0	329	2.6	570	15	.5	8.2	1170

06348000 - HEART RIVER NR LARK, ND (LAT 46 36 37 LONG 101 22 54)

DATE	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAY , 1980 30...	3.9	7.4	338	0	277	8.6	430	10	.4	3.4	943
JUL 22...	4.1	6.9	303	7	260	1.3	420	12	.2	1.1	840

CANNONBALL RIVER BASIN

06351000 - CANNONBALL RIVER BELOW BENTLEY, ND (LAT 46 21 30 LONG 102 02 30)

DATE	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
JUN , 1980 03...	4.8	7.6	263	0	216	2.7	500	8.6	.2	3.6	928
JUL 08...	3.9	7.6	383	0	314	3.9	540	10	.4	8.0	1090

06351680 - WHITE BUTTE FORK CEDAR CREEK NR SCRANTON, ND (LAT 46 19 20 LONG 102 59 45)

DATE	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
JUN , 1980 05...	7.8	13	222	0	182	2.2	2800	27	.3	1.8	4300

06352000 - CEDAR CREEK NR HAYNES, ND (LAT 46 09 15 LONG 102 28 25)

DATE	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
JUN , 1980 04...	6.9	8.7	528	0	433	4.2	820	14	.5	6.3	1620
JUL 08...	4.6	9.4	416	0	341	3.3	670	12	.4	6.9	1360

06353000 - CEDAR CREEK NR RALEIGH, ND (LAT 46 05 00 LONG 101 20 00)

DATE	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAY , 1980 29...	6.9	8.9	417	0	342	8.4	840	14	.5	5.4	1530
JUL 07...	4.7	9.9	321	0	263	1.4	700	9.6	.3	7.2	1240

JAMES RIVER BASIN

06467600 - JAMES RIVER NR MANFRED, ND (LAT 47 38 40 LONG 099 49 40)

DATE	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
JUN , 1980 12...	1.4	8.0	287	0	235	4.6	57	6.5	.2	27	381
SEP 12...	2.7	8.0	500	0	410	10	67	16	.3	13	520

ANALYSES OF SAMPLES AT MISCELLANEOUS SURFACE-WATER QUALITY SITES

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P) (00671)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)
PART 6. MISSOURI RIVER BASIN										
HEART RIVER BASIN										
06345500 - HEART RIVER NR RICHARDTON, ND (LAT 46 44 46 LONG 102 18 27)										
JUN , 1980 16...	1160	1.65	624	1.0	--	--	.00	70	10	20
AUG 04...	1170	1.59	1.04	1.0	--	--	.06	210	30	50
06348000 - HEART RIVER NR LARK, ND (LAT 46 36 37 LONG 101 22 54)										
MAY , 1980 30...	900	1.28	150	1.0	--	--	.00	160	30	20
JUL 22...	869	1.14	186	1.0	--	--	.03	270	30	20
CANNONBALL RIVER BASIN										
06351000 - CANNONBALL RIVER BELOW BENTLEY, ND (LAT 46 21 30 LONG 102 02 30)										
JUN , 1980 03...	934	1.26	1050	2.0	--	--	.15	260	20	120
JUL 08...	1090	1.48	11.5	.20	--	--	.00	140	10	0
06351680 - WHITE BUTTE FORK CEDAR CREEK NR SCRANTON, ND (LAT 46 19 20 LONG 102 59 45)										
JUN , 1980 05...	4140	5.85	.12	1.0	--	--	.01	1100	40	180
06352000 - CEDAR CREEK NR HAYNES, ND (LAT 46 09 15 LONG 102 28 25)										
JUN , 1980 04...	1610	2.20	28.9	1.0	--	--	.01	390	40	40
JUL 08...	1310	1.85	3.67	1.0	--	--	.00	510	10	60
06353000 - CEDAR CREEK NR RALEIGH, ND (LAT 46 05 00 LONG 101 20 00)										
MAY , 1980 29...	1570	2.08	12.1	1.0	--	--	.00	530	80	70
JUL 07...	1260	1.69	26.8	1.0	--	--	.00	160	20	20
JAMES RIVER BASIN										
06467600 - JAMES RIVER NR MANFRED, ND (LAT 47 38 40 LONG 099 49 40)										
JUN , 1980 12...	350	.52	70.0	1.0	--	--	.79	30	100	0
SEP 12...	536	.71	4.63	1.0	--	--	.74	150	90	140

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPERATURE, WATER (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
PART 6. MISSOURI RIVER BASIN											
JAMES RIVER BASIN											
06468170 - JAMES RIVER NR GRACE CITY, ND (LAT 47 33 29 LONG 098 51 45)											
JUN , 1980											
11...	1445	179	800	8.6	22.0	300	23	53	41	72	33
SEP											
11...	1430	44	540	8.7	18.0	200	0	39	25	38	28
06469400 - PIPESTEM CREEK NR PINGREE, ND (LAT 47 10 03 LONG 098 58 07)											
JUL , 1980											
23...	2010	1.7	720	9.0	24.5	290	0	54	38	71	34
AUG											
13...	1220	1.0	770	8.7	18.5	270	0	52	34	73	36
06470000 - JAMES RIVER AT JAMESTOWN, ND (LAT 46 53 22 LONG 098 40 58)											
JUL , 1980											
15...	2000	6.2	670	7.8	23.0	230	28	53	24	64	37
AUG											
13...	0845	4.1	780	7.7	16.5	270	32	59	30	76	37

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE (MG/L AS HCO3) (00440)	CAR-BONATE (MG/L AS CO3) (00445)	ALKA-LINITY (MG/L AS CACO3) (00410)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2) (00405)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
PART 6. MISSOURI RIVER BASIN											
JAMES RIVER BASIN											
06468170 - JAMES RIVER NR GRACE CITY, ND (LAT 47 33 29 LONG 098 51 45)											
JUN , 1980											
11...	1.8	12	339	0	278	1.4	160	17	.2	8.5	559
SEP											
11...	1.2	9.0	283	0	232	.9	57	8.0	.2	16	301
06469400 - PIPESTEM CREEK NR PINGREE, ND (LAT 47 10 03 LONG 098 58 07)											
JUL , 1980											
23...	1.8	9.1	343	31	333	.6	100	14	.2	5.9	495
AUG											
13...	1.9	10	403	0	331	1.3	97	11	.2	6.4	493
06470000 - JAMES RIVER AT JAMESTOWN, ND (LAT 46 53 22 LONG 098 40 58)											
JUL , 1980											
15...	1.8	6.1	248	0	203	6.3	130	23	.2	14	458
AUG											
13...	2.0	5.3	265	13	239	9.3	150	28	.3	16	490

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 6. MISSOURI RIVER BASIN

JAMES RIVER BASIN

06468170 - JAMES RIVER NR GRACE CITY, ND (LAT 47 33 29 LONG 098 51 45)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
JUN , 1980										
11...	532	.76	270	1.0	--	--	.42	0	20	10
SEP										
11...	333	.41	35.8	1.0	--	--	.32	150	40	10

06469400 - PIPESTEM CREEK NR PINGHEE, ND (LAT 47 10 03 LONG 098 58 07)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
JUL , 1980										
23...	495	.67	2.29	1.0	--	--	1.7	0	20	30
AUG										
13...	485	.67	1.33	1.0	--	--	1.3	30	40	70

06470000 - JAMES RIVER AT JAMESTOWN, ND (LAT 46 53 22 LONG 098 40 58)

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P) (00671)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS PO4) (00660)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
JUL , 1980										
15...	439	.62	7.73	.70	--	--	.67	210	50	700
AUG										
13...	511	.67	5.42	1.0	--	--	.14	400	30	1300

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05051500 - RED RIVER OF THE NORTH AT WAHPETON, ND (LAT 46 15 55 LONG 096 35 40)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979					MAY , 1980				
24...	1200	425	400	6.5	14...	1120	641	441	13.0
NOV					JUN				
28...	1545	186	540	.0	20...	0915	443	519	21.0
DEC					JUL				
18...	1615	358	472	.5	17...	0935	127	451	26.5
FEB , 1980					AUG				
06...	1115	431	550	.0	14...	0955	128	459	22.0
MAR					SEP				
19...	1350	598	500	.5	10...	1710	26	518	21.0
APR									
03...	1900	1030	470	.5					
04...	0850	865	531	2.0					

05051600 - WILD RICE RIVER NR RUTLAND, ND (LAT 46 01 20 LONG 097 30 40)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
MAR , 1980					MAY . 1980				
19...	1825	8.0	205	.0	14...	1540	.12	1160	18.0
24...	1500	93	528	2.5	JUN				
31...	1515	60	481	6.0	20...	1225	.32	1210	18.5

05054000 - RED RIVER OF THE NORTH AT FARGO, ND (LAT 46 51 40 LONG 096 47 00)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979					APR , 1980				
04...	1010	496	395	13.0	07...	1535	3090	422	3.5
NOV					MAY				
07...	1025	399	450	3.0	13...	1225	714	528	13.5
DEC					JUN				
07...	1415	418	543	.0	17...	0835	941	548	22.5
FEB , 1980					JUL				
07...	1045	399	560	.5	15...	0915	106	599	27.5
MAR					AUG				
05...	1105	456	649	.0	12...	0935	194	446	22.0
25...	1510	695	516	3.0	SEP				
31...	1900	2790	409	.5	09...	1210	16	513	20.0
APR									
03...	1520	4370	328	1.5					

05056000 - SHEYENNE RIVER NR WARWICK, ND (LAT 47 48 20 LONG 098 42 57)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979					MAY , 1980				
19...	1435	7.6	780	8.0	14...	1040	24	928	12.0
NOV					JUN				
19...	1620	23	914	2.5	12...	1525	63	930	23.5
DEC					JUL				
17...	1545	7.2	852	.5	14...	1640	6.4	915	26.5
FEB , 1980					30...	1425	2.3	658	19.0
06...	1055	3.6	890	1.0	AUG				
MAR					14...	1330	5.1	896	20.5
05...	1355	6.8	1240	--	SEP				
27...	0955	11	850	1.0	23...	1455	49	872	11.0
APR									
06...	1500	359	495	.5					
17...	1305	78	682	10.5					

05056400 - BIG COULEE NR CHURCHS FERRY, ND (LAT 48 10 40 LONG 099 13 15)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979					APR , 1980				
16...	1355	15	900	11.0	17...	1030	23	600	9.5
NOV					MAY				
20...	0930	17	949	--	02...	1615	14	852	23.0
DEC					JUN				
18...	1420	3.7	1340	.0	12...	1020	.11	1460	22.0
MAR , 1980					AUG				
31...	1505	6.2	765	1.0	14...	1005	.09	1470	18.0
APR					SEP				
02...	0945	6.8	1130	.5	24...	1400	4.0	1460	9.5
06...	1130	28	742	1.0					
09...	1405	6.8	908	1.0					

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

0505 500 - SHEYENNE RIVER AT VALLEY CITY, N. DAK. (LAT 46 54 50 LONG 098 00 30)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
MAR , 1980				
25...	1920	171	--	.5
APR				
01...	1430	368	702	1.0
AUG , 1980				
26...	1825	13	687	20.5

05059400 - SHEYENNE RIVER NR HORACE, ND (LAT 46 48 13 LONG 096 54 13)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979				
03...	1040	E55	830	11.0
MAR , 1980				
27...	0940	443	518	1.0
29...	1700	638	419	1.0
APR , 1980				
01...	1450	544	489	1.0

05059500 - SHEYENNE RIVER AT WEST FARGO, ND (LAT 46 53 28 LONG 096 54 24)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979				
03...	0930	55	850	12.0
NOV				
08...	1110	216	675	.5
DEC				
07...	1635	76	916	.0
FEB , 1980				
08...	0850	48	1220	.5
MAR				
05...	1435	33	1200	.0
20...	1840	52	1160	.5
26...	1015	389	751	.5
APR				
04...	1715	541	452	.5
APR , 1980				
17...	1100	369	791	8.5
MAY				
23...	1725	59	938	21.5
JUN				
17...	1645	97	988	22.0
JUL				
15...	1330	63	1160	27.5
AUG				
13...	0940	42	667	20.5
SEP				
09...	0855	93	985	20.0

05059600 - MAPLE RIVER NR HOPE, ND (LAT 47 19 30 LONG 097 47 25)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
MAR , 1980				
19...	1630	.10	250	.5
27...	1530	.15	420	1.0
30...	1035	25	300	1.0
APR , 1980				
03...	1115	7.1	551	5.0

05060500 - RUSH RIVER AT AMENIA, ND (LAT 47 01 00 LONG 097 12 50)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
NOV , 1979				
26...	1255	.46	2480	.5
DEC				
19...	1410	E.01	1410	.5
MAR , 1980				
26...	1900	51	430	.5
28...	1430	59	474	.5
APR				
02...	1345	61	446	2.5
APR , 1980				
08...	1350	21	726	4.0
MAY				
13...	1745	1.4	1540	13.0
JUN				
17...	1140	.22	1570	21.0
SEP				
09...	1445	.02	--	20.0

05066500 - GOOSE RIVER AT HILLSBORO, ND (LAT 47 24 20 LONG 097 03 40)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979				
04...	1515	1.9	1575	12.0
NOV				
08...	1625	6.8	1800	2.5
DEC				
05...	1230	8.9	1940	1.0
FEB , 1980				
08...	1210	4.7	1790	.5
MAR				
07...	1310	5.3	2050	.5
26...	1130	30	1570	.5
APR				
02...	1740	755	460	1.0
APR , 1980				
08...	1640	300	632	4.0
MAY				
12...	1255	11	1190	12.5
JUN				
16...	1115	4.1	1400	20.0
JUL				
14...	1125	.48	1340	26.0
AUG				
11...	1100	.08	1520	20.5
SEP				
08...	1055	3.5	1490	20.5

E - Estimated

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05082500 - RED RIVER OF THE NORTH AT GRAND FORKS, ND (LAT 47 56 34 LONG 097 03 10)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979				
22...	1515	1670	430	8.0
NOV				
20...	1140	2320	542	.5
DEC				
20...	1125	1360	506	1.0
JAN , 1980				
24...	1220	1300	482	.5
FEB				
25...	1545	1420	510	.0
MAR				
24...	1455	1610	468	.5
APR				
03...	1425	11200	372	1.0
07...	1445	21300	340	1.5
10...	1200	16700	--	4.0
11...	1435	12400	431	4.0
APR , 1980				
14...	1315	6930	488	6.0
18...	1445	4950	530	--
21...	1330	4150	450	13.0
25...	1015	3040	523	9.0
MAY				
22...	1145	1620	500	20.0
JUN				
25...	1130	1360	505	24.5
JUL				
25...	1310	849	460	22.0
AUG				
05...	1010	361	621	22.0
SEP				
25...	1100	484	672	12.0

05083600 - MIDDLE BRANCH FOREST RIVER NR WHITMAN, ND (LAT 48 14 50 LONG 098 07 00)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
APR , 1980				
02...	1435	1.8	390	.5
08...	1430	10	500	2.0
16...	1240	1.5	1010	9.5
JUN , 1980				
03...	1810	.48	950	20.0
SEP				
08...	1800	.38	1750	17.5

05084000 - FOREST RIVER NR FORDVILLE, ND (LAT 48 11 50 LONG 097 43 49)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
NOV , 1979				
20...	1700	6.9	670	1.0
DEC				
17...	1230	2.6	792	.0
FEB , 1980				
06...	1525	7.6	731	.5
MAR				
07...	1345	13	640	.0
28...	1235	17	530	.5
APR				
02...	1010	53	480	.5
08...	1115	78	450	2.0
MAY , 1980				
06...	1230	12	680	11.0
JUN				
03...	1600	4.9	660	21.0
JUL				
09...	1200	3.2	670	23.0
AUG				
07...	1115	3.9	649	18.0
SEP				
08...	1340	6.1	658	20.0

05089000 - SOUTH BRANCH PARK RIVER BELOW HOMME DAM, ND (LAT 48 24 07 LONG 097 46 55)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
NOV , 1979				
20...	1340	.29	790	3.0
DEC				
17...	1530	3.6	758	.0
FEB , 1980				
06...	1125	.54	942	.5
MAR				
06...	1625	.17	990	.5
29...	1255	.44	915	1.0
APR				
02...	1820	.60	770	1.5
08...	1805	78	400	2.0
16...	0940	17	460	5.0
MAY , 1980				
06...	1700	1.0	710	13.5
JUN				
04...	1240	24	740	15.0
JUL				
09...	1830	.92	720	27.0
AUG				
05...	1230	1.0	660	19.5
SEP				
09...	1020	4.0	663	14.0

05089100 - MIDDLE BRANCH PARK RIVER NR UNION, ND (LAT 48 32 32 LONG 098 01 10)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
NOV , 1979				
20...	1111	.05	700	1.0
MAR , 1980				
28...	1655	.29	288	.5
APR				
01...	0920	14	205	.5
04...	1445	12	258	1.0
10...	1255	2.4	378	6.0
17...	0935	.41	480	7.0
MAY				
06...	1130	.18	658	8.0
JUN , 1980				
05...	0920	.73	502	16.0
12...	1635	.04	600	22.5
JUL				
09...	0850	.01	645	20.0
AUG				
05...	1025	.03	639	15.0
SEP				
10...	1235	.28	510	15.0

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

482708097320700 - MIDDLE BRANCH PARK RIVER NR NASH, ND (LAT 48 27 08 LONG 097 32 07)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
JUN , 1980 11...	1545	9.4	520	18.0	JUL , 1980 08...	1205	.14	1120	22.0

05089200 - NORTH BRANCH PARK RIVER AT GARDAR, ND (LAT 48 35 30 LONG 097 52 50)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
JUN , 1980 12...	1425	.08	750	24.5	JUL , 1980 08...	1530	.06	710	25.0

483209097383300 - NORTH BRANCH PARK RIVER AB HOOPLE, ND (LAT 48 32 09 LONG 097 38 33)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
JUN , 1980 11...	1720	1.1	870	24.0

483216097380300 - NORTH BRANCH PARK RIVER AT HOOPLE, ND (LAT 48 32 16 LONG 097 38 03)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
JUN , 1980 11...	1500	.38	6000	24.0

483639097423600 - CART CREEK AB CRYSTAL, ND (LAT 48 36 39 LONG 097 42 36)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
JUN , 1980 12...	1015	.00	900	16.0

483236097351600 - CART CREEK NR HOOPLE, ND (LAT 48 32 36 LONG 097 35 16)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
JUN , 1980 12...	0730	.00	1020	18.5

05090000 - PARK RIVER AT GRAFTON, ND (LAT 48 25 24 LONG 097 24 30)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
NOV , 1979 19...	1510	1.1	1030	3.5	MAY , 1980 07...	1350	4.9	940	10.0
DEC 19...	1640	3.6	1260	.5	JUN 05...	1620	110	820	19.0
FEB , 1980 05...	1325	1.7	1490	.5	JUL 08...	1615	.42	830	25.0
MAR 04...	1540	.83	1910	.0	AUG 06...	1810	.97	700	20.0
APR 03...	1500	15	1260	2.0	SEP 09...	1740	4.2	1600	17.0
09...	1545	286	450	2.5					

05092000 - RED RIVER OF THE NORTH AT DRAYTON, ND (LAT 48 34 20 LONG 097 08 50)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
NOV , 1979 19...	1820	2220	758	.5	APR , 1980 22...	1250	4670	580	12.0
DEC 19...	1315	1490	672	.5	MAY 05...	1330	2590	600	17.0
JAN , 1980 30...	1435	1370	680	.0	JUN 02...	1410	1380	630	20.0
MAR 03...	1510	1500	610	.0	JUL 08...	1115	1090	600	24.0
31...	1840	3760	540	.0	AUG 08...	1050	390	588	20.5
APR 07...	1545	20500	380	1.5	SEP 10...	1235	649	578	17.5
10...	1535	22300	400	2.5					
14...	1535	13300	550	4.5					
17...	1345	7870	570	7.0					

05092200 - PEMBINA COUNTY DRAIN 20 NR GLASSTON, ND (LAT 48 41 49 LONG 097 23 03)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
MAR , 1980 29...	1510	12	350	.5	APR , 1980 15...	1235	.28	500	8.5
APR 03...	1055	9.0	340	.5	SEP 09...	1430	.36	572	20.5
09...	1035	1.5	430	2.0					

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05098700 - HIDDEN ISLAND COULEE NR HANSBORO, ND (LAT 48 57 10 LONG 099 25 35)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
APR , 1980					SEP , 1980				
04...	1600	62	348	1.0	30...	1600	.90	962	13.0
16...	1250	4.4	605	7.5					
17...	1410	2.3	--	9.5					
30...	1615	.12	1060	17.5					

05098800 - CYPRESS CREEK NR SARLES, ND (LAT 48 56 35 LONG 098 57 05)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
APR , 1980					JUL , 1980				
04...	1350	2.1	348	3.0	31...	0945	.01	809	19.5
16...	1100	3.6	728	8.5	SEP				
30...	1100	.12	1060	13.5	30...	1345	.02	1100	15.0

05099400 - LITTLE SOUTH PEMBINA RIVER NR WALHALLA, ND (LAT 48 51 55 LONG 098 00 20)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979					APR , 1980				
23...	1615	1.1	750	8.0	07...	1020	58	588	3.0
NOV					15...	1140	16	694	8.0
27...	1215	.74	897	1.0	22...	1105	7.4	818	13.0
DEC					MAY				
20...	0835	.43	1020	.0	06...	1650	2.6	825	10.5
JAN , 1980					JUN				
29...	1245	.23	899	.5	04...	0925	1.3	938	16.5
FEB					JUL				
26...	1230	.22	927	1.0	08...	1125	.38	861	21.0
MAR					AUG				
26...	1500	.68	837	1.0	05...	1335	.83	766	22.0
31...	1745	137	323	.5	SEP				
APR					09...	1040	.88	910	14.5
02...	0840	120	408	.5					

05100000 - PEMBINA RIVER AT NECHE, ND (LAT 48 59 20 LONG 097 33 05)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
NOV , 1979					MAY , 1980				
08...	1105	18	--	1.5	01...	0935	137	840	10.0
DEC					JUN				
18...	1100	9.6	1100	.0	03...	1325	84	730	19.5
JAN , 1980					JUL				
22...	1200	5.9	--	.0	09...	1430	12	870	26.0
MAR					AUG				
05...	1215	5.1	1060	.0	06...	1510	10	890	22.0
APR					SEP				
01...	1720	31	720	1.0	10...	1555	7.0	840	19.5
08...	1740	428	478	.5					
16...	0905	199	630	7.0					

05113600 - LONG CREEK NR NOONAN, ND (LAT 48 58 52 LONG 103 04 34)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979					APR , 1980				
04...	1015	.61	1200	9.0	02...	1050	37	1250	1.0
NOV					09...	1355	38	1000	2.0
08...	1400	.60	1240	3.0	17...	1230	74	1120	10.0
DEC					MAY				
04...	1135	.68	1250	1.5	06...	1325	5.3	1780	15.5
JAN , 1980					JUN				
08...	1225	.32	1350	.5	05...	1155	.20	1760	22.0
FEB					JUL				
13...	1040	.19	1650	.5	08...	1225	.03	1680	20.5
MAR									
18...	1320	.39	1490	1.0					

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 5. HUDSON BAY BASIN

RED RIVER OF THE NORTH BASIN

05117500 - SOURIS RIVER ABOVE MINOT, ND (LAT 48 14 45 LONG 101 22 15)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979				
05...	1130	51	1130	10.5
NOV				
29...	1600	20	1220	.5
JAN , 1980				
08...	1540	4.2	1540	.0
FEB				
06...	1635	6.8	1490	.0
MAR				
06...	1030	6.1	1600	.5
APR				
01...	1010	35	1540	.5
03...	0930	33	1340	.5
10...	1800	21	840	1.0
APR , 1980				
30...	1000	557	780	16.0
JUN				
03...	0845	E5.8	1200	18.5
03...	0846	E5.8	1200	18.5
JUL				
02...	1330	1.6	1180	23.0
AUG				
05...	1330	7.5	1060	19.5
SEP				
09...	1215	6.3	900	17.5
30...	0930	12	900	13.0

05122000 - SOURIS RIVER NR BANTRY, ND (LAT 48 30 20 LONG 100 26 04)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979				
03...	1245	51	1140	11.5
03...	1246	51	1140	11.5
NOV				
05...	1440	58	1240	2.0
27...	1125	53	1270	.0
JAN , 1980				
10...	1130	24	1490	.0
APR				
01...	1745	32	1180	.5
28...	1610	38	810	21.0
JUN , 1980				
03...	1600	228	1060	20.0
05...	1415	177	1060	21.5
30...	1800	E28	1100	24.5
AUG				
04...	1610	26	940	17.0
SEP				
02...	1515	52	770	16.0

05123510 - DEEP RIVER NR UPHAM, ND (LAT 48 35 03 LONG 100 51 44)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
APR , 1980				
02...	1830	.24	525	1.0
04...	1005	4.1	540	1.0
08...	1420	3.3	620	1.0
APR , 1980				
29...	1000	.33	760	15.0

05123700 - CUT BANK CREEK AT N LAKE OUTLET NR GRANVILLE, ND (LAT 48 23 10 LONG 100 46 00)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979				
04...	1400	4.8	990	10.0
NOV				
06...	1400	E2.0	1160	3.0
29...	1800	.87	1380	.0
APR , 1980				
04...	1120	2.9	520	1.0
29...	1320	2.1	750	16.0
JUN				
03...	1130	.09	1070	18.0

05123900 - BOUNDARY CREEK NR LANDA, ND (LAT 48 48 46 LONG 100 51 46)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
APR , 1980				
09...	1145	1.4	300	2.0
MAY				
01...	0945	.53	740	15.0
SEP , 1980				
03...	1145	.16	420	15.5

PART 6. MISSOURI RIVER BASIN

LITTLE MUDDY RIVER BASIN

06[illegible]1900 - LITTLE MUDDY RIVER BL COW CREEK NR WILLISTON, ND (LAT 48 17 04 LONG 103 36 21)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979				
03...	1150	8.5	2000	11.0
NOV				
06...	1540	13	2000	3.0
DEC				
05...	1320	13	2220	1.0
JAN , 1980				
10...	1210	6.0	2400	.0
FEB				
14...	0940	7.6	2060	.5
MAR				
19...	0950	10	2250	1.0
APR , 1980				
03...	1020	25	1450	1.0
MAY				
07...	1630	12	2100	15.5
JUN				
03...	1225	8.0	2200	16.5
JUL				
09...	0845	5.8	2110	19.0
AUG				
07...	0810	5.5	2200	17.0
SEP				
04...	0945	7.9	2325	14.5

E - Estimated

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 6. MISSOURI RIVER BASIN

TOBACCO GARDEN CREEK BASIN

06331680 - TOBACCO GARDEN CREEK NR WATFORD CITY, ND (LAT 47 59 33 LONG 103 09 57)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979				
02...	1705	.29	3050	13.0
NOV				
09...	1100	.83	4200	2.0
DEC				
06...	0950	.95	3900	2.5
JAN , 1980				
11...	1120	.57	3600	.0
FEB				
15...	1100	.32	3000	.5
MAR				
21...	1030	1.2	3400	2.5
31...	1640	12	1500	3.0
APR , 1980				
10...	1025	6.4	1525	3.5
MAY				
09...	1015	1.0	2800	10.5
JUN				
06...	1120	.34	3000	18.0
JUL				
10...	1310	.43	2980	26.0
AUG				
08...	1040	.32	3100	19.5
SEP				
02...	1450	.37	3400	17.5

SHELL CREEK BASIN

06332520 - SHELL CREEK NR PARSHALL, ND (LAT 48 03 11 LONG 102 08 10)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979				
01...	1405	64	2850	10.0
NOV				
05...	1325	1.5	2750	2.5
DEC				
06...	1235	1.0	3000	1.0
JAN , 1980				
09...	1220	.09	2200	.0
MAR				
17...	1545	.80	2250	.5
APR				
04...	1050	9.9	1650	1.0
MAY , 1980				
08...	1325	4.9	3000	13.0
JUN				
02...	1215	1.6	3000	20.0
JUL				
07...	1330	.49	3020	25.0
29...	1525	.10	2520	22.0
AUG				
06...	1320	.33	3000	17.5
27...	1305	.41	2950	17.5

LITTLE MISSOURI RIVER BASIN

06335500 - LITTLE MISSOURI RIVER AT MARMARTH, ND (LAT 46 17 44 LONG 103 55 06)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979				
03...	1240	10	2150	9.5
NOV				
05...	1630	25	1800	3.5
DEC				
05...	1400	16	2500	.0
JAN , 1980				
17...	1250	1.3	3290	.5
FEB				
14...	1125	.55	3150	.0
MAR				
19...	1110	210	1300	7.0
MAR , 1980				
31...	1400	459	1360	4.0
APR				
01...	1000	400	1350	3.5
02...	1210	146	1190	4.5
MAY				
07...	1225	12	2400	13.0
JUN				
05...	1315	3.8	2940	20.0
SEP				
10...	1200	3.6	2910	20.0

KNIFE RIVER BASIN

06339490 - ELM CREEK NR GOLDEN VALLEY, ND (LAT 47 06 25 LONG 102 03 05)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
APR , 1980				
02...	1140	1.6	1730	2.0
JUN , 1980				
24...	1100	E.01	2500	19.5

06339500 - KNIFE RIVER NR GOLDEN VALLEY, ND (LAT 47 09 40 LONG 102 03 39)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979				
22...	1445	7.0	1910	7.5
NOV				
19...	1345	8.3	2500	1.0
DEC				
18...	1050	5.7	3210	1.5
JAN , 1980				
24...	1030	7.1	4380	.0
MAR				
07...	1105	6.2	3560	.0
20...	1335	37	2700	.5
APR				
01...	1320	78	1410	1.0
22...	1415	20	1780	16.5
MAY , 1980				
22...	1205	6.2	2150	23.0
JUN				
14...	1140	1410	700	19.5
24...	1335	23	1310	24.0
JUL				
29...	1530	1.7	1920	24.5
AUG				
21...	1225	3.8	1770	21.0
SEP				
24...	1225	2.7	1920	12.0

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 6. MISSOURI RIVER BASIN

KNIFE RIVER BASIN

06340200 - WEST BRANCH OTTER CREEK NR BEULAH, ND (LAT 47 08 05 LONG 101 39 35)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
NOV , 1979					APR , 1980				
20...	1240	E.02	1360	5.0	09...	1200	1.1	1210	5.5
FEB , 1980					23...	1035	.12	1560	15.5
25...	1545	.04	1150	.5	MAY				
MAR					28...	0750	.04	1520	18.0
18...	1530	10	790	1.0	JUN				
20...	1050	9.2	652	.5	24...	0830	.03	2100	20.5

PAINTED WOODS CREEK BASIN

06341800 - PAINTED WOODS CREEK NR WILTON, ND (LAT 47 16 30 LONG 100 47 30)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
NOV , 1979					JUN , 1980				
23...	1340	.08	2700	2.0	02...	0915	.03	1550	18.0
DEC					06...	1340	138	820	20.0
19...	1300	.10	2500	1.0	24...	1530	3.0	1360	24.0
MAR , 1980					JUL				
18...	1650	1.8	1170	1.5	23...	1405	.79	1350	25.0
21...	1030	1.6	840	.5	AUG				
APR					25...	1450	1.6	1200	20.0
03...	1425	10	770	1.5	SEP				
23...	1555	1.0	1200	18.0	24...	1005	.65	1600	11.0

SQUARE BUTTE CREEK BASIN

06342260 - SQUARE BUTTE CREEK BELOW CENTER, ND (LAT 47 03 25 LONG 101 11 35)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979					APR , 1980				
23...	1000	E1.3	1200	5.0	23...	1345	1.4	1300	16.0
NOV					MAY				
21...	1128	1.2	1200	2.5	27...	1240	1.5	1300	22.5
DEC					JUN				
18...	0940	1.3	1400	2.0	26...	1400	6.4	1500	21.0
JAN , 1980					JUL				
29...	1140	E1.3	1350	.0	21...	1525	5.0	1500	23.0
FEB					AUG				
26...	1050	E2.6	1320	1.0	28...	1055	5.7	1400	20.0
MAR					SEP				
20...	1615	6.4	1290	5.5	24...	1430	1.4	1500	14.0
26...	1345	1.5	1300	16.0					

BURNT CREEK BASIN

06342450 - BURNT CREEK NR BISMARCK, ND (LAT 46 58 54 LONG 100 48 48)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
MAR , 1980					APR , 1980				
17...	1525	55	750	.5	24...	1345	.83	1000	13.0
18...	1415	123	410	.5	JUN				
21...	1315	47	210	.5	06...	1545	3.2	900	20.0
24...	1525	15	340	1.0	SEP				
27...	1415	6.4	400	1.0	02...	1140	.55	1100	14.5
APR									
04...	1005	2.5	660	.5					

HEART RIVER BASIN

06345500 - HEART RIVER NR RICHARDTON, ND (LAT 46 44 46 LONG 102 18 27)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979					APR , 1980				
04...	1540	5.7	1060	19.0	10...	1215	62	1110	4.0
NOV					21...	1555	26	1400	--
13...	1535	16	2890	.5	MAY				
DEC					05...	1305	13	1700	19.0
03...	1340	14	2800	.0	JUN				
JAN , 1980					02...	1640	4.2	2230	20.5
14...	1410	2.9	2730	.0	16...	1430	191	1600	20.0
FEB					JUL				
12...	1425	7.0	2400	.0	07...	1405	25	1350	25.5
MAR					AUG				
17...	1355	40	1800	.0	04...	1455	.33	1750	16.5
31...	1425	100	1140	.0	SEP				
APR					02...	1535	3.6	1820	20.5
04...	1230	54	1140	2.0					

E - Estimated

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 6. MISSOURI RIVER BASIN

HEART RIVER BASIN

06348000 - HEART RIVER NR LARK, ND (LAT 46 36 37 LONG 101 22 54)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	TEMPER-ATURE, WATER (DEG C) (00010)
OCT , 1979					APR , 1980				
22...	1320	35	950	9.0	21...	1310	32	1100	18.0
NOV					MAY				
19...	1220	48	1300	1.0	30...	1125	59	1220	18.0
DEC					JUN				
17...	1400	35	1400	.0	25...	1500	28	1160	27.0
JAN , 1980					JUL				
29...	1000	9.3	1800	.0	22...	1045	82	1100	24.0
FEB					AUG				
25...	1400	11	1700	.0	26...	1135	74	1200	17.0
MAR					SEP				
21...	1430	134	1080	.5	23...	1355	20	1300	17.0
25...	1230	90	820	1.0					

CANNONBALL RIVER BASIN

06351000 - CANNONBALL RIVER BELOW BENTLEY, ND (LAT 46 21 30 LONG 102 02 30)

OCT , 1979					APR , 1980				
01...	1800	7.0	1730	15.0	11...	1625	33	1210	9.0
NOV					MAY				
07...	1640	15	1790	.5	05...	1600	15	1870	21.0
DEC					JUN				
03...	1605	13	2200	.0	03...	1040	418	1320	13.5
JAN , 1980					26...	1345	12	1520	20.5
					JUL				
14...	1635	6.6	2520	.0	08...	1110	3.9	1520	21.5
FEB					AUG				
13...	1110	9.4	2410	.0	05...	1000	1.3	1540	16.0
MAR					SEP				
18...	1030	19	1710	.0	08...	1750	11	2150	20.0
APR									
01...	1500	46	1160	1.0					

06351680 - WHITE BUTTE FORK CEDAR CREEK NR SCRANTON, ND (LAT 46 19 20 LONG 102 59 45)

NOV , 1979					APR , 1980				
07...	1155	.11	4700	1.0	03...	1600	.39	1960	2.0
DEC					MAY				
04...	1610	.25	4000	.5	07...	1720	.01	4190	17.0
MAR , 1980					JUN				
19...	1640	.84	2460	.0	05...	1820	.01	4810	24.5

06352000 - CEDAR CREEK NR HAYNES, ND (LAT 46 09 15 LONG 102 28 25)

OCT , 1979					APR , 1980				
02...	1050	1.8	1910	12.0	01...	1730	8.3	1700	1.0
NOV					MAY				
07...	1415	3.7	1830	1.0	06...	1700	3.0	1930	17.5
DEC					JUN				
04...	1350	4.2	2750	.5	04...	1130	6.6	2170	19.5
JAN , 1980					JUL				
15...	1800	2.4	3330	.5	08...	1810	1.0	1820	22.0
FEB					AUG				
13...	1620	3.1	2910	.0	05...	1700	.40	1990	21.0
MAR					SEP				
20...	1600	8.5	2130	.0	03...	1115	.88	1890	17.0

06353000 - CEDAR CREEK NR RALEIGH, ND (LAT 46 05 00 LONG 101 20 00)

OCT , 1979					MAY , 1980				
25...	1005	7.5	2400	7.0	29...	1125	2.9	2000	19.0
NOV					JUN				
20...	0915	12	2400	.5	25...	1050	51	950	25.5
DEC					JUL				
17...	1030	6.0	3000	.0	07...	1330	8.0	1600	27.0
FEB , 1980					22...	1540	7.0	1050	25.0
25...	1200	7.6	3800	.0	AUG				
MAR					26...	0910	.43	520	18.0
20...	1100	13	1700	.0	SEP				
25...	1050	16	1900	1.0	23...	0940	.01	750	17.0
APR									
02...	1330	28	1540	.5					
21...	1030	19	1350	18.0					

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

PART 6. MISSOURI RIVER BASIN

BEAVER CREEK BASIN

06354500 - BEAVER CREEK AT LINTON, ND (LAT 46 15 27 LONG 100 13 58)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979					MAR , 1980				
25...	1130	1.0	1080	5.0	31...	1500	50	400	1.5
NOV					APR				
26...	1220	3.6	1190	1.0	28...	1230	15	875	16.5
DEC					MAY				
20...	1035	2.5	1250	.5	27...	1730	2.8	1050	24.0
FEB , 1980					28...	0945	86	990	19.5
04...	1410	1.1	1480	.5	JUN				
MAR					24...	1235	3.5	840	22.5
19...	1530	235	560	.5	JUL				
20...	1520	239	310	.5	24...	1345	.05	880	24.5
26...	1940	75	340	.0					

JAMES RIVER BASIN

06467600 - JAMES RIVER NR MANFRED, ND (LAT 47 38 40 LONG 099 49 40)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979					MAY , 1980				
17...	1550	.01	1180	11.5	02...	1600	.56	900	21.0
NOV					JUN				
09...	1530	.02	1210	1.5	12...	1735	68	540	25.0
27...	1400	E.04	1260	3.0	JUL				
MAR , 1980					24...	1450	.68	1090	25.5
24...	1715	5.0	540	.5	AUG				
28...	1335	8.7	440	.0	14...	1515	5.4	670	21.0
APR					SEP				
03...	1705	10	515	7.0	12...	1515	3.3	825	15.5

06468170 - JAMES RIVER NR GRACE CITY, ND (LAT 47 33 29 LONG 098 51 45)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979					MAY , 1980				
04...	0915	.21	1150	4.5	02...	1000	4.4	890	16.5
18...	1200	.23	1200	9.0	JUN				
NOV					11...	1445	179	800	22.0
08...	1645	.42	1200	1.0	JUL				
28...	1245	.42	1760	1.0	24...	1115	8.0	615	21.5
JAN , 1980					AUG				
04...	1615	.18	1950	1.0	13...	1930	2.8	695	22.0
MAR					SEP				
25...	1050	7.6	525	.5	11...	1430	44	540	18.0
APR									
03...	1145	33	440	1.5					

06469400 - PIPESTEM CREEK NR PINGREE, ND (LAT 47 10 03 LONG 098 58 07)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979					MAY , 1980				
03...	1645	.20	960	11.5	01...	1500	6.9	700	23.0
NOV					JUN				
08...	1410	.15	1120	3.0	06...	1155	56	550	20.0
29...	1115	.17	1320	2.0	JUL				
JAN , 1980					23...	2010	1.7	720	24.5
04...	1200	.17	1180	1.0	AUG				
MAR					13...	1220	1.0	770	18.5
21...	1800	28	480	.5	SEP				
25...	1335	25	390	.5	10...	1815	16	640	20.5
APR									
02...	1725	32	405	4.5					

06470000 - JAMES RIVER AT JAMESTOWN, ND (LAT 46 53 22 LONG 098 40 58)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
OCT , 1979					APR , 1980				
03...	1340	240	450	13.0	02...	1315	64	580	6.0
NOV					30...	1615	14	725	21.0
07...	1450	231	495	1.5	JUN				
28...	1525	69	580	.0	05...	1525	15	750	21.5
JAN , 1980					JUL				
03...	1650	8.0	600	1.0	15...	2000	6.2	670	23.0
FEB					AUG				
06...	1145	4.4	1100	1.0	13...	0845	4.1	780	16.5
MAR					SEP				
10...	1445	5.2	850	1.0	10...	1210	100	750	16.5
21...	1545	98	600	1.0					

06470800 - BEAR CREEK NR OAKES, ND (LAT 46 13 31 LONG 098 04 17)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)	DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	TEMPERATURE, WATER (DEG C) (00010)
NOV , 1979					APR , 1980				
06...	1010	.16	1400	3.0	01...	1120	32	450	3.5
27...	0945	E.08	1480	3.0	29...	1140	3.7	845	17.0
MAR , 1980					JUN				
21...	1050	17	580	1.0	03...	1505	.24	1025	24.5
26...	0935	49	480	.5					

E - Estimated

BENSON COUNTY

480228098482501. Local number, 153-063-30CBC.
LOCATION.--Lat 48°02'28", long 098°48'25", Hydrologic Unit 09020201.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 200 ft (61 m), cased to 137 ft (41.8 m), plastic pipe, No. 18 slot screen set 137 to 143 ft (41.8 to 43.6 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,445 ft (440 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--June 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.54 ft (5.04 m) below land-surface datum, June 12, 1980; lowest measured, 25.05 ft (7.64 m) below land-surface datum, Mar. 4, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	16.62	MAR 3	16.66	JUNE 12	16.54	SEPT 23	16.81

BENSON COUNTY

480958099154801. Local number, 154-067-15BBB.
LOCATION.--Lat 48°09'58", long 099°15'48", Hydrologic Unit 09020201.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 180 ft (54.9 m), cased to 147 ft (44.8 m), plastic pipe, No. 18 slot screen set 147 to 153 ft (44.8 to 46.6 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,475 ft (450 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--June 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.16 ft (9.80 m) below land-surface datum, Sept. 20, 1979; lowest measured, 33.80 ft (10.30 m) below land-surface datum, Mar. 15, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	33.24	MAR 4	32.37	JUNE 12	32.31	SEPT 24	32.38

BENSON COUNTY

481041099442701. Local number, 154-071-11AAD1.
LOCATION.--Lat 48°10'41", long 099°44'27", Hydrologic Unit 09020202.
Owner: North Dakota State Water Commission.
AQUIFER.--Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 100 ft (30.5 m), cased to 42 ft (12.8 m), plastic pipe, No. 12 slot screen set 42 to 45 ft (12.8 to 13.7 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,590 ft (485 m). Measuring point: Top of casing 2.0 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--August 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.47 ft (1.97 m) below land-surface datum, June 6, 1979; lowest measured, 9.05 ft (2.76 m) below land-surface datum, Mar. 13, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	7.80	MAR 4	8.17	JUNE 11	7.80		

BOWMAN COUNTY

461534103491701. Local number, 132-105-16BDB.
LOCATION.--Lat 46°15'34", long 103°49'17", Hydrologic Unit 10110203.
Owner: North Dakota State Water Commission.
AQUIFER.--Hell Creek-Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in (0.05 m), depth 475 ft (145 m), cased to 441 ft (134 m), steel pipe, No. 12 slot screen set 441 to 459 ft (134 to 140 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 3,010 ft (917 m). Measuring point: Top of casing 3.40 ft (1.04 m) above land-surface datum.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 270.15 ft (82.34 m) below land-surface datum, Feb. 25, 1973; lowest measured, 271.73 ft (82.82 m) below land-surface datum, Jan. 11, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28	271.22	MAR 19	270.99	JUNE 5	271.17	SEPT 10	271.32

BURLEIGH COUNTY

464943100305801. Local number, 139-078-27CBB.
LOCATION.--Lat 46°49'43", long 100°30'58", Hydrologic Unit 10130103.
Owner: North Dakota State Water Commission.
AQUIFER.--McKenzie.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 255 ft (77.7 m), cased to 200 ft (61 m), plastic pipe, slotted 200 to 220 ft (61 to 67 m) below land-surface datum, gravel packed.
DATUM.--Altitude of land-surface datum is 1,713 (522 m). Measuring point: Top of casing 1.90 ft (0.58 m) above land-surface datum.
PERIOD OF RECORD.--August 1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.30 ft (6.80 m) below land-surface datum, June 17, 1970; lowest measured, 32.44 ft (9.89 m) below land-surface datum, Aug. 26, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	26.49	APR 21	24.70	JUNE 26	29.97	SEPT 2	28.43
NOV 28	25.85	MAY 28	27.96	JULY 22	30.28	SEPT 25	27.64
MAR 27	24.63						

CASS COUNTY

464359096541301. Local number, 138-049-29CCC.
LOCATION.--Lat 46°43'59", long 096°54'13", Hydrologic Unit 09020105.
Owner: North Dakota State Water Commission.
AQUIFER.--West Fargo.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 317 ft (96.6 m), cased to 278 ft (84.7 m), plastic pipe, screens set at 278 to 280 ft (84.7 to 85.3 m) below land-surface datum.
DATUM.--Altitude of land-surfac datum is 912 ft (278 m). Measuring point: Top of casing 1.80 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--August 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.17 ft (9.81 m) below land-surface datum, Aug. 1, 1964; lowest measured, 45.08 ft (13.74 m) below land-surface datum, Aug. 13, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	43.86	MAY 22	44.83	JULY 16	45.06	SEPT 9	45.05
MAR 25	43.54	JUNE 20	44.59	AUG. 13	45.08		

DIVIDE COUNTY

485649103155701. Local number, 163-97-15BCC.
LOCATION.--Lat 48°56'49", long 103°15'57", Hydrologic Unit 09010001.
Owner: North Dakota State Water Commission.
AQUIFER.--Yellowstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in (0.05 m), depth 575 ft (175 m), cased to 546 ft (166 m), steel pipe, No. 12 slot screen set 546 to 558 ft (166 to 170 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,915 ft (584 m). Measuring point: top of casing 1.50 ft (0.46 m) above land-surface datum.
PERIOD OF RECORD.--August 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.31 ft (3.14 m) below land-surface datum, June 5, 1979; lowest measured, 14.48 ft (4.41 m) below land-surface datum, Aug. 9, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 29	11.02	MAR 18	10.51	JUNE 5	10.85	AUG 28	11.10

DUNN COUNTY

471323102290101. Local number, 143-093-09BCB.
LOCATION.--Lat 47°13'23", long 102°29'01", Hydrologic Unit 10130201.
Owner: North Dakota State Water Commission.
AQUIFER.--Sentinel Butte.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in (0.05 m), depth 965 ft (294 m), cased to 378 ft (115 m), steel pipe, No. 12 slot screen set 378 to 396 ft (115 to 121 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 2,133 ft (650 m). Measuring point: Top of casing 2.10 ft (0.64 m) above land-surface datum.
PERIOD OF RECORD.--February 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 92.59 ft (28.22 m) below land-surface datum, Nov. 30, 1978; lowest measured, 93.50 ft (28.50 m) below land-surface datum, Sept. 25, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 20	93.34	APR 2	93.04	JUNE 24	93.09	SEPT 25	93.50

EDDY COUNTY

473720098592401. Local number, 148-065-19DAA.
LOCATION.--Lat 47°37'20", long 098°59'24", Hydrologic Unit 10160001.
Owner: North Dakota State Water Commission.
AQUIFER.--New Rockford.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 242 ft (74 m), cased to 220 ft (67 m), plastic pipe, slotted from 210 to 220 ft (64 to 67 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,526 ft (465 m). Measuring point: Top of casing 1.90 ft (0.58 m) above land-surface datum.
PERIOD OF RECORD.--September 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 43.51 ft (13.26 m) below land-surface datum, June 28, 1966; lowest measured, 50.49 ft (15.39 m) below land-surface datum, Sept. 6, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 4	46.92	MAR 12	45.09	JUNE 11	46.01	AUG 14	48.66
NOV 9	46.35	APR 3	45.35	JULY 24	48.39	SEPT 11	47.45
NOV 28	46.19	MAY 2	45.54				

EMMONS COUNTY

463632100171901. Local number, 136-076-07CBC.
LOCATION.--Lat 46°36'32", long 100°17'19", Hydrologic Unit 10130103.
Owner: North Dakota State Water Commission.
AQUIFER.--Long Lake.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 150 ft (45.7 m), cased to 117 ft (35.7 m), plastic pipe, No. 12 slot screen set at 117 to 123 ft (35.7 to 37.5 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,735 ft (529 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--November 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.21 ft (0.37 m) below land-surface datum, May 31, 1979; lowest measured, 8.32 ft (2.54 m) below land-surface datum, Sept. 1, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 29	3.99	MAY 23	4.24	SEPT 2	5.71		

GRAND FORKS COUNTY

474957097343501. Local number, 150-054-04CCD.
LOCATION.--Lat 47°49'57", long 097°34'35", Hydrologic Unit 09020307.
Owner: North Dakota State Water Commission.
AQUIFER.--Elk Valley.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 126 ft (38.4 m), cased to 40 ft (12.2 m), plastic pipe, No. 12 slot screen set 40 to 43 ft (12.2 to 13.1 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,127 ft (344 m). Measuring point: Top of casing 1.80 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--September 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.48 ft (0.76 m) below land-surface datum, May 6, 1966; lowest measured, 7.96 ft (2.43 m) below land-surface datum, Mar. 7, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 26	4.46	MAR 7	6.12	JUNE 3	4.95	SEPT 8	6.78

GRANT COUNTY

460159101500401. Local number, 130-089-32DDA.
LOCATION.--Lat 46°01'59", long 101°50'04", Hydrologic Unit 10130205.
Owner: North Dakota State Water Commission.
AQUIFER.--Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 2 in (0.05 m), depth 860 ft (262 m), cased to 525 ft (160 m), steel pipe, No. 12 slot screen set 525 to 543 ft (160 to 166 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 2,165 ft (660 m). Measuring point: Top of casing 4.00 ft (1.22 m) above land-surface datum.
PERIOD OF RECORD.--November 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 37.18 ft (11.33 m) below land-surface datum, Sept. 8, 1980; lowest measured, 57.00 ft (17.37 m) below land-surface datum, Nov. 7, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	56.82	MAR 8	56.72	JULY 8	56.97	SEPT 8	37.18

GRIGGS COUNTY

471612098113101. Local number, 144-059-20CCC.
LOCATION.--Lat 47°16'12", long 098°11'31", Hydrologic Unit 09020203.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 240 ft (73 m), cased to 158 ft (48 m), plastic pipe, No. 25 slot screen set 158 to 161 ft (48 to 49 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,430 ft (436 m). Measuring point: Top of casing 2.0 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 45.84 ft (13.97 m) below land-surface datum, Apr. 5, 1977; lowest measured, 86.99 ft (26.51 m) below land-surface datum, Aug. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	55.70	APR 14	48.80	JULY 1	67.94	AUG 25	74.71
DEC 3	52.23	JUNE 3	70.44	JULY 29	79.95	SEPT 23	64.15
FEB 5	49.51						

GRIGGS COUNTY

473425098232901. Local number, 147-061-01CCC.
LOCATION.--Lat 47°34'25", long 098°23'29", Hydrologic Unit 09020203.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 340 ft (104 m), cased to 237 ft (72 m), plastic pipe, No. 25 slot screen set 237 to 240 ft (72 to 73 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,525 ft (465 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--September 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.82 ft (8.18 m) below land-surface datum, May 19, 1976; lowest measured, 96.10 ft (29.3 m) below land-surface datum, Aug. 12, 1975.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 7	39.60	APR 28	28.90	MAY 23	64.15	JULY 29	95.51
DEC 3	32.60	APR 29	28.88	MAY 30	61.68	AUG 26	55.88
FEB 6	29.54	MAY 5	40.29	JUNE 4	56.47	SEPT 24	41.80
APR 27	28.93	MAY 15	57.15	JULY 2	45.21		

GRIGGS COUNTY

473600098065901. Local number, 148-059-36AAB.
LOCATION.--Lat 47°36'00", long 098°06'59", Hydrologic Unit 09020203.
Owner: North Dakota State Water Commission.
AQUIFER.--McVille.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 180 ft (54.9 m), cased to 137 ft (41.8 m), plastic pipe, No. 12 slot screen set 137 to 143 ft (41.8 to 43.6 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,320 ft (402 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--October 1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.40 ft (1.95 m) below land-surface datum, May 3, 1979; lowest measured, 12.09 ft (3.69 m) below land-surface datum, Aug. 9, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	10.00	JUNE 3	10.90	JULY 29	11.31	AUG 25	11.69
APR 15	9.95	JULY 1	11.59				

HETTINGER COUNTY

463153102521001. Local number, 135-097-04DCA.
LOCATION.--Lat 46°31'53", long 102°52'10", Hydrologic Unit 10130204.
Owner: North Dakota State Water Commission.
AQUIFER.--Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 1,790 ft (546 m), cased to 1,320 ft (402 m), steel pipe, open hole.
DATUM.--Altitude of land-surface datum is 2,567 ft (782 m). Measuring point: Top of casing 0.70 ft (0.21 m) above land-surface datum.
PERIOD OF RECORD.--September 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 141.87 ft (43.24 m) below land-surface datum, Dec. 31, 1968; lowest measured, 144.20 ft (43.95 m) below land-surface datum, Nov. 26, 1969.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30	143.10	MAR 20	142.96	JUNE 6	143.00	SEPT 8	143.07

KIDDER COUNTY

470638099324301. Local number, 142-070-16DDD.
LOCATION.--Lat 47°06'38", long 099°32'43", Hydrologic Unit 10130103.
Owner: North Dakota State Water Commission.
AQUIFER.--Long Lake.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 84 ft (25.6 m), cased to 70 ft (21.3 m), plastic pipe, No. 18 slot screen set 70 to 73 ft (21.3 to 22.3 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,810 ft (552 m). Measuring point: Top of casing 1.90 ft (0.58 m) above land-surface datum.
PERIOD OF RECORD.--November 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.94 ft (6.08 m) below land-surface datum, Dec. 4, 1976; lowest measured, 25.44 ft (7.75 m) below land-surface datum, Aug. 27, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	21.60	MAY 19	22.08	JUNE 30	21.87	JULY 28	24.52
NOV 14	21.50	JUNE 3	21.67	JULY 14	23.19	AUG 12	22.10
APR 20	21.30	JUNE 16	21.57				

MC LEAN COUNTY

473752101055301. Local number, 148-082-23BBB.
LOCATION.--Lat 47°37'52", long 101°05'53", Hydrologic Unit 10130101.
Owner: North Dakota State Water Commission.
AQUIFER.--Lake Nettie.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 300 ft (91 m), cased to 198 ft (60 m), plastic pipe, No. 24 slot screen set 198 to 204 ft (60 to 62 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,880 ft (573 m). Measuring point: Top of casing 2.30 ft (0.70 m) above land-surface datum.
PERIOD OF RECORD.--December 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 37.60 ft (11.46 m) below land-surface datum, June 4, 1979; lowest measured, 42.30 ft (12.89 m) below land-surface datum, Dec. 2, 1970.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	37.96	MAR 20	37.94	JUNE 23	38.18	AUG 25	38.30
NOV 20	37.85	APR 25	37.95	JULY 21	38.39	SEPT 22	38.30
FEB 20	37.94	MAY 21	38.12				

OLIVER COUNTY

470642101162701. Local number, 142-084-24BBA.
LOCATION.--Lat 47°06'42", long 101°16'27", Hydrologic Unit 10130101.
Owner: North Dakota State Water Commission.
AQUIFER.--Fox Hills Sandstone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 1,295 ft (395 m), cased to 966 ft (294 m), steel pipe, open ended.
DATUM.--Altitude of land-surface datum is 2,006 ft (611 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--January 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 197.04 ft (60.06 m) below land-surface datum, Dec. 8, 1972; lowest measured, 208.70 ft (63.61 m) below land-surface datum, Nov. 24, 1971.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 21	199.03	FEB 26	199.82	JUNE 5	198.70	AUG 28	198.86

PEMBINA COUNTY

485239097501702. Local number, 162-056-01CCC2.
LOCATION.--Lat 48°52'39", long 097°50'17", Hydrologic Unit 09020313.
Owner: North Dakota State Water Commission.
AQUIFER.--Icelandic.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 40 ft (12 m), cased to 37 ft (11.3 m), plastic pipe, No. 12 slot screen set 37 to 40 ft (11.3 to 12.2 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 988 ft (301 m). Measuring point: Top of casing 1.8 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--October 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.65 ft (1.42 m) below land-surface datum, May 8, 1970; lowest measured, 8.06 ft (2.46 m) below land-surface datum, Dec. 4, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28	6.91	MAR 5	7.29	JUNE 4	7.23	SEPT 9	7.02

PIERCE COUNTY

475323100092101. Local number, 151-074-20AAA.
LOCATION.--Lat 47°53'23", long 100°09'21", Hydrologic Unit 09020202.
Owner: North Dakota State Water Commission.
AQUIFER.--New Rockford.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 320 ft (98 m), cased to 256 ft (78 m), plastic pipe, No. 18 slot screen set 256 to 259 ft (78 to 79 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,605 ft (489 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--November 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.74 ft (8.15 m) below land-surface datum, Feb. 26, 1979; lowest measured, 31.73 ft (9.67 m) below land-surface datum, Dec. 10, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	29.48	MAR 13	29.11	SEPT 11	29.80		

RICHLAND COUNTY

462633097163402. Local number, 134-052-06CCD2.
LOCATION.--Lat 46°26'33", long 097°16'34", Hydrologic Unit 09020204.
Owner: North Dakota State Water Commission.
AQUIFER.--Sheyenne Delta.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 40 ft (12 m), cased to 30 ft (9.1 m), plastic pipe, slotted 30 to 40 ft (9.1 to 12.2 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,067 ft (325 m). Measuring point: Top of casing 0.65 ft (0.20 m) above land-surface datum.
REMARKS.--Well pumped, repainted and identification installed on Sept. 17, 1969.
PERIOD OF RECORD.--September 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.78 ft (0.24 m) below land-surface datum, May 13, 1972; lowest recorded, 8.73 ft (2.66 m) below land-surface datum, Feb. 8, 1977. May have been lower during period of missing record, Jan. 17 - Feb. 7, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MINIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	6.61	5.77	---	6.28	---	7.22	4.91	5.03	---	6.11	7.22	6.87
10	6.78	5.76	---	6.33	7.02	7.29	4.52	5.14	---	6.43	6.72	7.17
15	6.83	5.71	---	6.56	7.07	7.32	4.54	---	---	6.74	6.76	6.91
20	6.67	5.31	6.06	6.59	7.12	6.82	4.49	---	5.22	6.45	6.64	7.04
25	6.79	5.37	6.07	6.74	7.12	6.42	4.61	---	5.76	6.81	6.60	7.16
EOM	6.04	---	6.15	7.01	7.17	5.69	4.77	---	5.40	7.03	6.68	7.15
MIN	6.04	5.29	6.05	6.15	7.02	5.69	4.48	4.81	5.10	5.58	6.53	6.69

WTR YR 1980 MEAN 6.30 HIGH 4.48 APR 14 LOW 7.32 MAR 14 AND OTHERS

STARK COUNTY

465755102410701. Local number, 140-095-08AAA.
LOCATION.--Lat 46°57'55", long 102°41'07", Hydrologic Unit 10130204.
Owner: North Dakota State Water Commission.
AQUIFER.--Sentinel Butte.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 160 ft (49 m), cased to 80 ft (24.4 m), plastic pipe, open ended.
DATUM.--Altitude of land-surface datum is 2,419 ft (737 m). Measuring point: Top of casing 1.70 ft (0.52 m) above land-surface datum.
PERIOD OF RECORD.--December 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.61 ft (4.76 m) below land-surface datum, June 19, 1970; lowest measured, 27.23 ft (8.30 m) below land-surface datum, Dec. 10, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	18.11	JAN 24	18.56	MAY 22	18.46	AUG 20	19.18
NOV 20	18.39	FEB 28	18.84	JUNE 24	17.91	SEPT 23	19.02
DEC 19	18.33	MAR 26	18.70	JULY 23	18.31		

STEELE COUNTY

471601097371001. Local number, 144-055-26BBB.
LOCATION.--Lat 47°16'01", long 097°37'10", Hydrologic Unit 09020109.
Owner: North Dakota State Water Commission.
AQUIFER.--Galesburg.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 300 ft (91 m), cased to 53 ft (16.2 m), plastic pipe, slotted 53 to 68 ft (16.2 to 20.7 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,160 ft (354 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--June 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.43 ft (5.31 m) below land-surface datum, June 27, 1970; lowest measured, 23.35 ft (7.12 m) below land-surface datum, Aug. 25, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	20.55	MAR 3	20.72	JUNE 3	20.89	AUG 25	23.35

STUTSMAN COUNTY

463846098274101. Local number, 137-062-26DDD.
LOCATION.--Lat 46°38'46", long 098°27'41", Hydrologic Unit 10160003.
Owner: North Dakota State Water Commission.
AQUIFER.--Spiritwood.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 240 ft (73 m), cased to 157 ft (48 m), plastic pipe, No. 12 slot screen set 157-163 ft (48 to 50 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,455 ft (443 m). Measuring point: Top of casing 1.80 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--September 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.20 ft (4.63 m) below land-surface datum, Sept. 6, 1979; lowest measured, 20.67 ft (6.30 m) below land-surface datum, May 28, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	17.40	APR 14	16.27	JUNE 9	15.55	AUG 8	16.68
NOV 7	15.60	MAY 13	16.44	JULY 16	16.49	SEPT 3	16.68
DEC 5	15.64						

TRAILL COUNTY

473228097051501. Local number, 147-051-22BBB.
LOCATION.--Lat 47°32'28", long 097°05'15", Hydrologic Unit 09020301.
Owner: North Dakota State Water Commission.
AQUIFER.--Hillsboro.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 103 ft (31.4 m), cased to 97 ft (29.6 m), plastic pipe, No. 18 slot screen set 97 to 100 ft (29.6 m to 30.5 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 925 ft (282 m). Measuring point: Top of casing 2.40 ft (0.73 m) above land-surface datum.
PERIOD OF RECORD.--August 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +1.90 ft (+0.58 m) above land-surface datum, July 4, 1979; lowest measured, 7.27 ft (2.22 m) below land-surface datum, Aug. 17, 1965.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	0.30	JUNE 16	5.46	SEPT 8	3.19		

WALSH COUNTY

481657097473601. Local number, 156-056-36CCC1.
LOCATION.--Lat 48°16'57", long 097°47'36", Hydrologic Unit 09020308.
Owner: North Dakota State Water Commission.
AQUIFER.--Fordville.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 280 ft (85.3 m), cased to 27 ft (8.23 m), plastic pipe, No. 18 slot screen set 27 to 30 ft (8.23 to 9.14 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,145 ft (349 m). Measuring point: Top of casing 1.85 ft (0.56 m) above land-surface datum.
PERIOD OF RECORD.--May 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.15 ft (1.57 m) below land-surface datum, Mar. 5, 1971; lowest measured, 6.95 ft (2.12 m) below land-surface datum, June 13, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 29	5.50	SEPT 8	6.00				

WALSH COUNTY

482408097443201. Local number, 157-055-21DBC.
LOCATION.--Lat 48°24'08", long 097°44'32", Hydrologic Unit 09020301.
Owner: North Dakota State Water Commission.
AQUIFER.--Dakota Formation.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 496 ft (151 m), cased to 491 ft (150 m), steel pipe, screen set 491 to 496 ft (150 to 151 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 975 ft (297 m). Measuring point: Top of casing at land-surface datum.
PERIOD OF RECORD.--May 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 90.67 ft (27.64 m) below land-surface datum, Mar. 7, 1978; lowest measured, 92.75 ft (28.27 m) below land-surface datum, Sept. 17, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 29	91.24	MAR 6	90.98	JUNE 4	91.02	SEPT 8	91.04

WALSH COUNTY

482449098095801. Local number, 157-058-18DDD.
LOCATION.--Lat 48°24'49", long 098°09'58", Hydrologic Unit 09020308.
Owner: North Dakota State Water Commission.
AQUIFER.--Pierre Shale.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), depth 140 ft (42.7 m), cased to 80 ft (24.4 m), plastic pipe, slotted screen set 80 to 100 ft (24.4 to 30.5 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,580 ft (482 m). Measuring point: Top of casing 1.00 ft (0.30 m) above land-surface datum.
PERIOD OF RECORD.--June 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.89 ft (+0.27 m) above land-surface datum, Dec. 5, 1972; lowest measured, 9.15 ft (2.79 m) below land-surface datum, Mar. 14, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 29	7.07	MAR 5	7.88	JUNE 3	1.65	SEPT 8	2.87

WARD COUNTY

480912101090301. Local number, 154-082-24ABA.
LOCATION.--Lat 48°09'12", long 101°09'03", Hydrologic Unit 09010001.
Owner: North Dakota State Water Commission.
AQUIFER.--Lower Souris.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 115 ft (35.1 m), cased to 10 ft (3.0 m), plastic pipe, slotted screen set 10 to 40 ft (3.0 to 12.2 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,850 ft (564 m). Measuring point: Top of casing 1.70 ft (0.52 m) above land-surface datum.
REMARKS.--Measurement frequency has been changed from annual to quarterly as of Jan. 31, 1977.
PERIOD OF RECORD.--January 1964 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.33 ft (1.93 m) below land-surface datum, July 30, 1969; lowest measured, 13.69 ft (4.17 m) below land-surface datum, Mar. 4, 1964.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30	10.83	JUNE 4	11.82	SEPT 11	12.74		

WELLS COUNTY

474419099371201. Local number, 149-070-09DAA1.
LOCATION.--Lat 47°44'19", long 099°37'12", Hydrologic Unit 10160001.
Owner: North Dakota State Water Commission.
AQUIFER.--New Rockford.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 283 ft (86 m), cased to 177 ft (54 m), plastic pipe, slotted 177 to 197 ft (54 to 60 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,610 ft (491 m). Measuring point: Top of casing 1.80 ft (0.55 m) above land-surface datum.
PERIOD OF RECORD.--May 1966 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 64.78 ft (19.74 m) below land-surface datum, Sept. 4, 1979; lowest measured, 66.65 ft (20.32 m) below land-surface datum, Mar. 15, 1967.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28	65.66	JUNE 11	64.98	SEPT 11	65.15		

WILLIAMS COUNTY

483048103373101. Local number, 158-100-17ADA.
LOCATION.--Lat 48°30'48", long 103°37'31", Hydrologic Unit 10110102.
Owner: North Dakota State Water Commission.
AQUIFER.--Little Muddy.
WELL CHARACTERISTICS.--Drilled observation well, diameter 1.25 in (0.03 m), depth 52 ft (15.8 m), cased to 35 ft (10.7 m), plastic pipe, slotted 35 to 43 ft (10.7 to 13.1 m) below land-surface datum.
DATUM.--Altitude of land-surface datum is 1,987 ft (606 m). Measuring point: Top of casing 2.00 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--August 1966 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.02 ft (5.49 m) below land-surface datum, June 5, 1979; lowest measured, 20.32 ft (6.19 m) below land-surface datum, July 18, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	19.17	MAR 18	19.24	JUNE 5	19.06	AUG 28	19.58

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	COUNTY	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET)	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)
			ADAMS						
461130102122601	131-092-05DDD	* 001	125TGRV	140	80-06-23	1525	2900	8.4	10.0
		† 001	125TGRV	140	80-06-23	1645	3000	8.3	14.5
			BENSON						
475329098351401	151-062-15CCC	005	112WRCK	25	79-11-15	1100	480	7.5	7.5
		005	112WRCK	25	80-05-06	1430	530	E8.0	6.0
		005	112WRCK	25	80-08-13	0900	538	7.9	6.5
475131098444101	151-063-32ABD	005	112WRCK	23	79-11-15	0945	1200	7.0	9.5
		005	112WRCK	23	80-05-06	1600	1210	E7.5	6.0
		005	112WRCK	25	80-08-13	1030	1280	7.2	9.0
			BOTTINEAU						
483701101060401	159-081-11BBB	009	112TILL	20	79-11-16	0900	570	7.3	8.0
		009	112TILL	20	80-02-11	0900	436	8.0	4.0
		009	112TILL	20	80-05-05	1700	570	E8.1	4.5
		009	112TILL	20	80-08-12	0900	525	7.8	8.0
			BURKE						
483948102175901	160-090-21DDD1	013	125SNLB	152	80-09-23	1900	2000	8.3	9.0
		013	125SNLB	152	80-09-25	0900	2000	8.5	7.5
483948102175902	160-090-21DDD2	013	125SNLB	124	80-09-23	1600	1530	7.0	8.5
		013	125SNLB	124	80-09-25	1300	1550	8.0	7.5
484033102162101	160-090-23BBA	013	125SNLB	52	80-09-26	1840	2600	8.2	9.0
485107102470401	162-093-17CCC	013	125SNLB	126	80-09-23	1520	2800	8.4	10.5
484923102471401	162-093-30DDD1	* 013	125SNLB	144	80-09-25	0955	2950	8.5	8.0
		† 013	125SNLB	144	80-09-25	1155	3000	8.5	9.0
485245102511001	162-094-10AAA1	* 013	125SNLB	160	80-09-23	1345	2600	8.5	13.0
		† 013	125SNLB	160	80-09-23	1415	2550	8.7	10.0
485245102511002	162-094-10AAA2	* 013	125SNLB	40	80-09-23	1025	3000	8.7	8.5
		† 013	125SNLB	40	80-09-23	1210	3000	8.3	10.0
485008102510001	162-094-26BBB	* 013	125SNLB	100	80-09-26	1500	5000	8.4	8.0
		† 013	125SNLB	100	80-09-26	1625	5000	8.1	10.0
			DICKEY						
460630098014703	130-059-02AAA3	021	112OKES	18	79-11-14	1305	570	7.2	9.0
		021	112OKES	18	80-02-14	1030	612	7.5	7.5
		021	112OKES	18	80-05-07	1245	635	E7.5	5.5
		021	112OKES	18	80-08-14	0900	580	7.2	8.0
460401098012503	130-059-13CCC3	021	112OKES	18	79-11-14	1345	600	7.1	8.5
		021	112OKES	18	80-02-14	1100	570	7.4	8.5
		021	112OKES	18	80-05-07	1330	590	E7.6	7.5
		021	112OKES	18	80-08-14	0915	555	7.3	8.0
460448098041502	130-059-16AAA2	021	112OKES	18	79-11-14	1445	625	7.1	8.0
		021	112OKES	18	80-02-14	1200	645	7.5	7.0
		021	112OKES	18	80-05-07	1430	658	E7.7	5.0
		021	112OKES	18	80-08-14	1015	632	7.4	7.0
460403098041503	130-059-16DDD3	021	112OKES	18	79-11-14	1415	510	7.1	9.0
		021	112OKES	18	80-02-14	1130	547	7.4	7.5
		021	112OKES	18	80-05-07	1400	530	E7.6	5.5
		021	112OKES	18	80-08-14	0945	473	7.3	7.0
460818098040202	131-059-27BBB2	021	112OKES	23	79-11-14	1015	1180	7.1	7.5
		021	112OKES	23	80-02-14	0800	1200	7.6	7.0
		021	112OKES	23	80-05-07	1030	1220	E7.7	7.0
		021	112OKES	23	80-08-13	1715	950	7.5	7.0
460732098032402	131-059-27DCC2	021	112OKES	18	79-11-14	1145	290	7.4	7.5
		021	112OKES	18	80-02-14	0900	308	7.4	6.5
		021	112OKES	18	80-05-07	1115	338	E7.5	5.5
		021	112OKES	18	80-08-13	1015	308	7.1	8.0
460739098041102	131-059-28DDA2	021	112OKES	18	79-11-14	1115	560	7.4	9.0
		021	112OKES	18	80-02-14	0830	600	7.6	6.0
		021	112OKES	18	80-05-06	1045	600	E7.8	6.5
		021	112OKES	18	80-08-13	1745	540	7.4	8.0
460706098041102	131-059-33ADD2	021	112OKES	23	79-11-14	1245	660	7.3	8.5
		021	112OKES	23	80-02-14	0945	642	7.6	8.5
		021	112OKES	23	80-05-07	1200	695	E7.7	8.0

Geologic unit (aquifer):

125TGRV - Tongue River-Ludlow Members of Fort Union Formation, Paleocene age.
112WRCK - Warwick aquifer, Pleistocene age.
112TILL - Till deposits, Pleistocene age.
125SNLB - Sentinel Butte Member, Fort Union Formation.
112OKES - Oakes aquifer, Pleistocene age.

* - Sampled by air-lift pump.
† - Sampled by air-squeeze pump.
E - Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	COLOR (PLAT-INUM COBALT UNITS)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
ADAMS											
461130102122601	80-06-23	--	44	0	10	4.6	620	96	41	630	6.0
	80-06-23	--	41	0	9.0	4.3	630	97	43	640	5.6
BENSON											
475329098351401	79-11-15	5	260	60	68	22	4.3	5	.1	7.0	2.7
	80-05-06	0	280	94	74	24	4.7	3	.1	7.0	2.3
	80-08-13	0	280	69	72	24	4.3	3	.1	10	2.5
475131098444101	79-11-15	35	630	0	72	110	49	35	.8	62	13
	80-05-06	50	640	0	74	110	47	13	.8	66	19
	80-08-13	55	630	0	72	110	45	13	.8	65	20
BOTTINEAU											
483701101060401	79-11-16	0	300	38	70	30	15	16	.4	17	1.6
	80-02-11	0	210	41	30	33	16	14	.5	18	2.1
	80-05-05	0	320	56	67	36	13	8	.3	15	1.7
	80-08-12	0	270	33	60	30	12	9	.3	14	1.9
BURKE											
483948102175901	80-09-23	--	21	0	5.6	1.7	530	98	50	530	4.3
	80-09-25	--	21	0	5.6	1.7	510	98	48	510	4.4
483948102175902	80-09-23	--	400	0	98	38	240	56	5.2	250	9.9
	80-09-25	--	410	0	98	39	240	56	5.2	250	9.8
484033102162101	80-09-26	--	53	0	14	4.5	630	96	38	640	5.1
485107102470401	80-09-23	--	14	0	3.1	1.4	670	99	79	670	3.7
484923102471401	80-09-25	--	18	0	4.8	1.4	770	99	80	770	3.9
	80-09-25	--	17	0	4.4	1.3	770	99	83	770	3.9
485245102511001	80-09-23	--	14	0	3.1	1.4	660	99	78	660	3.7
	80-09-23	--	12	0	1.9	1.8	660	99	82	660	4.4
485245102511002	80-09-23	--	41	0	9.6	4.1	820	97	56	830	7.4
	80-09-23	--	37	0	8.8	3.7	780	97	56	790	6.6
485008102510001	80-09-26	--	82	0	19	8.3	1100	96	53	1110	7.2
	80-09-26	--	86	0	20	8.5	1200	97	57	1210	7.5
DICKEY											
460630098014703	79-11-14	5	270	20	70	23	15	15	.4	26	11
	80-02-14	5	270	20	78	23	14	10	.4	24	10
	80-05-07	10	320	41	84	27	16	9	.4	26	9.9
	80-08-14	0	270	12	71	23	14	10	.4	24	10
460401098012503	79-11-14	5	310	10	83	25	13	12	.3	17	4.1
	80-02-14	10	300	19	80	24	12	8	.3	16	3.5
	80-05-07	15	320	35	85	25	14	9	.3	17	3.3
	80-08-14	0	270	13	73	22	12	9	.3	15	3.2
460448098041502	79-11-14	5	290	0	80	23	26	22	.7	31	5.1
	80-02-14	10	310	1	85	24	25	15	.6	30	4.5
	80-05-07	0	320	6	87	24	26	15	.6	30	4.3
	80-08-14	0	290	0	79	23	25	15	.6	30	4.7
460403098041503	79-11-14	10	260	18	62	25	11	13	.3	18	7.3
	80-02-14	15	270	34	67	26	12	8	.3	18	6.2
	80-05-07	20	260	30	63	25	10	8	.3	16	6.1
	80-08-14	5	230	17	53	23	9.6	8	.3	16	6.5
460818098040202	79-11-14	5	630	270	160	55	23	11	.4	29	5.7
	80-02-14	5	670	310	170	59	24	7	.4	29	5.4
	80-05-07	0	670	260	170	60	23	7	.4	28	5.4
	80-08-13	0	480	140	120	43	19	8	.4	24	5.2
460732098032402	79-11-14	5	130	0	36	9.2	1.7	4	.1	9.3	7.6
	80-02-14	30	150	8	41	11	1.7	2	.1	8.7	7.0
	80-05-07	20	160	10	46	11	1.8	2	.1	9.2	7.4
	80-08-13	90	140	0	40	9.6	1.6	2	.1	7.0	7.5
460739098041102	79-11-14	0	310	27	67	34	16	17	.4	19	3.1
	80-02-14	5	310	96	68	33	13	8	.3	16	2.9
	80-05-06	0	310	77	67	34	15	10	.4	18	2.8
	80-08-13	0	280	40	61	31	14	10	.4	17	3.0
460706098041102	79-11-14	5	330	13	89	27	25	19	.6	30	5.4
	80-02-14	5	330	41	88	27	22	12	.5	29	5.1
	80-05-07	5	360	5	96	28	24	13	.6	29	4.9

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)
ADAMS											
461130102122601	80-06-23	410	950	5.9	.9	7.6	--	1850	2.52	--	.16
	80-06-23	410	1000	5.9	.9	7.1	--	1910	2.60	--	.74
BENSON											
475329098351401	79-11-15	200	71	2.6	.2	23	330	321	.45	1.6	--
	80-05-06	190	85	1.9	.2	22	348	334	.47	1.3	--
	80-08-13	210	76	2.8	.3	22	354	339	.48	2.0	--
475131098444101	79-11-15	730	13	9.1	.4	40	784	753	1.07	.20	--
	80-05-06	720	4.4	8.8	.4	35	772	738	1.05	.10	--
	80-08-13	710	52	8.7	.4	36	774	777	1.05	.03	--
BOTTINEAU											
483701101060401	79-11-16	260	71	1.1	.3	15	366	364	.50	.52	--
	80-02-11	170	56	.3	.2	8.9	240	250	.33	.24	--
	80-05-05	260	67	1.2	.3	13	353	357	.48	.07	--
	80-08-12	240	55	1.2	.3	12	306	319	.42	.30	--
BURKE											
483948102175901	80-09-23	860	310	12	.9	7.1	--	1390	1.89	--	1.3
	80-09-25	860	300	12	.9	6.8	--	1360	1.85	--	1.2
483948102175902	80-09-23	530	390	4.6	.1	22	--	1120	1.52	--	1.3
	80-09-25	520	390	4.7	.1	22	--	1120	1.52	--	1.4
484033102162101	80-09-26	800	600	9.8	1.1	22	--	1770	2.41	--	1.1
485107102470401	80-09-23	1170	330	34	2.4	11	--	1760	2.39	--	1.2
484923102471401	80-09-25	1190	500	34	2.4	7.1	--	2040	2.77	--	1.2
	80-09-25	1190	490	29	2.6	7.8	--	2020	2.75	--	1.1
485245102511001	80-09-23	1180	15	43	1.6	6.5	--	1440	1.96	--	1.0
	80-09-23	1410	30	54	2.0	6.7	--	1610	2.19	--	1.2
485245102511002	80-09-23	1520	1.7	51	1.2	6.7	--	1820	2.48	--	1.0
	80-09-23	1430	6.5	47	1.1	6.4	--	1720	2.34	--	1.2
485008102510001	80-09-26	1110	1400	19	1.3	6.1	--	3230	4.39	--	2.0
	80-09-26	1130	1500	21	1.3	5.8	--	3440	4.68	--	1.3
DICKEY											
460630098014703	79-11-14	250	59	3.0	.2	30	352	366	.48	.08	--
	80-02-14	250	55	3.1	.2	29	344	357	.47	.06	--
	80-05-07	280	63	2.5	.2	29	401	403	.55	.02	--
	80-08-14	260	58	3.0	.2	28	366	366	.50	.00	--
460401098012503	79-11-14	300	51	1.8	.5	31	387	394	.53	.10	--
	80-02-14	280	38	1.8	.4	31	347	361	.47	.02	--
	80-05-07	280	51	1.5	.5	31	386	383	.53	.02	--
	80-08-14	260	45	1.4	.4	29	363	346	.49	.00	--
460448098041502	79-11-14	320	36	14	.2	30	384	408	.52	.03	--
	80-02-14	310	35	7.0	.2	29	388	397	.53	.01	--
	80-05-07	310	40	8.3	.2	27	420	405	.57	.02	--
	80-08-14	320	37	7.8	.3	28	402	399	.55	.00	--
460403098041503	79-11-14	240	45	9.7	.1	28	332	337	.45	.05	--
	80-02-14	240	45	7.1	.1	27	339	338	.46	.02	--
	80-05-07	230	49	6.8	.2	25	341	327	.46	.02	--
	80-08-14	210	43	8.8	.2	25	301	299	.41	.04	--
460818098040202	79-11-14	360	200	85	.4	27	849	795	1.15	4.9	--
	80-02-14	360	180	92	.4	28	841	787	1.14	2.5	--
	80-05-07	410	150	88	.3	27	813	812	1.11	9.1	--
	80-08-13	340	110	49	.3	26	653	612	.89	7.7	--
460732098032402	79-11-14	130	12	5.0	.1	25	189	183	.26	.33	--
	80-02-14	140	7.3	4.6	.1	26	184	192	.25	.08	--
	80-05-07	150	12	5.6	.1	24	220	208	.30	.05	--
	80-08-13	140	9.3	5.1	.1	23	192	188	.26	.05	--
460739098041102	79-11-14	280	30	3.1	.3	32	386	417	.53	14	--
	80-02-14	210	45	5.3	.3	29	366	363	.50	9.0	--
	80-05-06	230	39	3.5	.3	28	388	395	.53	15	--
	80-08-13	240	29	2.2	.3	28	358	367	.49	12	--
460706098041102	79-11-14	320	54	4.6	.3	32	424	431	.58	.05	--
	80-02-14	290	54	4.7	.3	30	411	407	.56	.15	--
	80-05-07	350	60	4.0	.3	30	448	459	.61	.10	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHOPH USPHATE DISSOL. (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)
				ADAMS				
461130102122601	80-06-23	--	--	720	10	30	0	460
	80-06-23	--	--	740	10	30	0	450
				BENSON				
475329098351401	79-11-15	.000	.00	40	<10	260	--	--
	80-05-06	.010	.03	20	10	70	--	--
	80-08-13	.000	.01	60	<10	170	--	--
475131098444101	79-11-15	.080	.00	190	5900	390	--	--
	80-05-06	.030	.03	150	5500	340	--	--
	80-08-13	.030	.00	150	6000	--	--	--
				BOTTINEAU				
483701101060401	79-11-16	.020	.00	50	190	710	--	--
	80-02-11	.020	.00	50	10	240	--	--
	80-05-05	.010	.01	40	50	610	--	--
	80-08-12	.030	.00	80	90	570	--	--
				BURKE				
483946 02175901	80-09-23	--	--	100	50	10	0	160
	80-09-25	--	--	110	70	20	0	160
483948102175902	80-09-23	--	--	240	690	230	<10	2100
	80-09-25	--	--	130	<10	230	<10	2100
484033102162101	80-09-26	--	--	110	60	10	0	310
485107102470401	80-09-23	--	--	120	80	10	0	160
484923102471401	80-09-25	--	--	90	70	20	0	230
	80-09-25	--	--	100	70	20	0	220
485245102511001	80-09-23	--	--	90	70	10	1	160
	80-09-23	--	--	90	80	20	2	180
485245102511002	80-09-23	--	--	20	70	20	0	--
	80-09-23	--	--	100	50	20	0	--
485008102510001	80-09-26	--	--	70	50	30	0	750
	80-09-26	--	--	60	60	40	0	770
				DICKEY				
460630098014703	79-11-14	.000	.00	50	2800	860	--	--
	80-02-14	.040	.00	40	1500	560	--	--
	80-05-07	.020	.03	30	2300	820	--	--
	80-08-14	.010	.00	30	2200	690	--	--
460401098012503	79-11-14	.000	.00	40	3200	1000	--	--
	80-02-14	.020	.02	40	1400	560	--	--
	80-05-07	.060	.03	30	2300	830	--	--
	80-08-14	.020	.00	60	2500	980	--	--
460448098041502	79-11-14	.030	.01	50	220	1200	--	--
	80-02-14	.030	.02	50	140	850	--	--
	80-05-07	.050	.05	40	200	1100	--	--
	80-08-14	.050	.00	80	310	990	--	--
460403098041503	79-11-14	.050	.03	50	2700	1500	--	--
	80-02-14	.080	.06	60	1800	1300	--	--
	80-05-07	.180	.05	40	2100	1600	--	--
	80-08-14	.150	.07	80	2100	1300	--	--
460818098040202	79-11-14	.110	.09	110	<10	880	--	--
	80-02-14	.100	.05	110	<10	650	--	--
	80-05-07	.090	.05	110	<10	1100	--	--
	80-08-13	.120	.09	120	<10	890	--	--
460732098032402	79-11-14	.080	.01	30	4400	2500	--	--
	80-02-14	.010	.02	30	5600	2700	--	--
	80-05-07	.020	.04	30	5500	3800	--	--
	80-08-13	.010	.00	100	4300	3300	--	--
460739098041102	79-11-14	.020	.01	70	<10	1100	--	--
	80-02-14	.030	.02	70	<10	500	--	--
	80-05-06	.040	.02	60	<10	620	--	--
	80-08-13	.030	.00	100	<10	850	--	--
460706098041102	79-11-14	.010	.00	100	280	870	--	--
	80-02-14	.010	.01	100	30	350	--	--
	80-05-07	.020	.04	80	180	310	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	COUNTY	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET)	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)
DICKEY									
460706098041102	131-059-33ADD2	021	112OKES	23	80-08-14	0830	642	7.3	7.5
460719098040202	131-059-34BBC2	021	112OKES	19	79-11-14	1210	530	7.5	8.0
		021	112OKES	19	80-02-14	0930	580	7.7	7.5
		021	112OKES	19	80-05-07	1145	612	E7.8	7.5
		021	112OKES	19	80-08-14	0800	630	7.5	7.0
EDDY									
474347098524201	149-064-17ABB	027	112NRKF	26	79-11-15	0900	510	7.4	8.0
		027	112NRKF	26	80-02-13	1415	522	7.3	5.0
		027	112NRKF	26	80-05-06	1645	569	E7.7	6.5
		027	112NRKF	26	80-08-13	1130	592	7.4	7.0
474346098561401	149-065-14AAB	027	112NRKF	23	79-11-15	0830	700	7.3	7.5
		027	112NRKF	23	80-05-06	1715	738	E7.7	5.5
		027	112NRKF	23	80-08-13	1200	748	7.4	7.0
475004098375601	150-062-06DDA1	027	112WRCK	23	79-11-15	1030	370	7.4	8.5
		027	112WRCK	23	80-02-13	1300	382	7.5	5.0
		027	112WRCK	23	80-05-06	1530	370	E7.7	5.0
		027	112WRCK	23	80-08-13	0945	350	7.6	8.0
474747098354301	150-062-21ACD	027	112WRCK	--	79-11-19	1325	449	7.6	4.0
		027	112WRCK	--	80-05-14	1235	660	8.0	6.0
		027	112WRCK	--	80-08-14	1515	451	8.0	14.0
474851098425501	150-063-15BBC	027	112WRCK	--	79-11-19	1420	665	7.7	3.0
		027	112WRCK	--	80-02-06	1155	431	7.7	5.0
		027	112WRCK	--	80-05-14	1115	608	8.4	10.0
		027	112WRCK	--	80-08-14	1435	432	8.0	13.5
474628099010301	150-065-29CCC	027	112NRKF	23	79-11-15	0745	670	7.0	8.0
		027	112NRKF	23	80-02-13	1500	642	7.3	4.5
		027	112NRKF	23	80-05-06	1745	522	E7.6	3.0
		027	112NRKF	23	80-08-13	1300	620	7.3	6.5
GOLDEN VALLEY									
464716104003401	138-106-11AAA	* 033	125TRVL	60	80-07-30	1545	5800	7.0	9.0
		† 033	125TRVL	60	80-07-30	1700	5800	5.9	12.5
464907103585501	139-105-30CCD	033	125TRVL	200	79-10-10	0930	2850	8.7	9.5
		033	125TRVL	200	80-07-31	0935	3300	8.9	12.5
464946104014701	139-106-27AAD	* 033	125TRVL	29	80-07-30	1330	3000	8.0	9.0
		† 033	125TRVL	29	80-07-30	1445	3000	8.0	12.0
465656104014001	140-106-14BBB	* 033	125TRVL	260	80-07-29	1520	2400	8.9	11.0
		† 033	125TRVL	260	80-07-29	1700	2450	8.9	13.5
HETTINGER									
461348102121901	132-092-28BCB	* 041	125TGRV	60	80-07-22	1155	6000	8.3	9.5
		† 041	125TGRV	60	80-07-22	1305	6000	8.1	12.0
461452102194601	132-093-21BBB	* 041	125TGRV	60	80-06-16	1705	2600	8.2	9.0
		† 041	125TGRV	60	80-06-16	1820	2700	8.0	11.5
461755102163001	133-092-29CCC	* 041	125TGRV	240	80-07-22	0900	1900	8.6	10.0
		† 041	125TGRV	240	80-07-22	1035	1900	8.4	13.0
462632102462301	134-096-08BAB	* 041	125TGRV	160	80-07-23	1005	1700	8.6	10.0
		† 041	125TGRV	160	80-07-23	1310	1680	8.6	14.0
463143102444101	135-096-09ABA	* 041	125TGRV	160	80-07-24	1400	1380	8.6	11.0
		† 041	125TGRV	160	80-07-24	1545	1400	8.3	13.5
462906102465201	135-096-30AAA	* 041	125TGRV	48	80-07-23	1445	1700	8.3	9.0
		† 041	125TGRV	48	80-07-23	1550	1500	8.1	13.0
463050102492201	135-097-14AAA	* 041	125TGRV	120	80-07-24	1035	1450	8.1	10.0
		† 041	125TGRV	120	80-07-24	1200	1450	8.1	12.5
462729102520101	135-097-33DDC	* 041	125TGRV	145	80-06-26	1530	5000	8.3	10.0
		† 041	125TGRV	145	80-06-26	1645	5000	8.2	12.0
MCHENRY									
482028100475601	156-079-14BBB	049	112TILL	12	79-11-15	1425	780	7.5	8.5
		049	112TILL	12	80-02-11	1410	817	7.8	3.0
		049	112TILL	12	80-05-05	1330	422	E8.1	3.5
		049	112TILL	12	80-08-11	1545	765	7.3	8.5
482028100503201	156-079-16BBB	049	112TILL	19	79-11-15	1400	750	7.7	8.5
		049	112TILL	19	80-02-11	1240	792	7.7	3.5
		049	112TILL	19	80-05-05	1230	800	E7.8	3.0
		049	112TILL	19	80-08-11	1445	830	7.5	8.5
482405100474601	157-078-19CCC	049	112TILL	20	79-11-15	1500	950	7.5	9.5

Geologic unit (aquifer):

112OKES - Oakes aquifer, Pleistocene age.
112NRKF - New Rockford aquifer, Pleistocene age.
112WRCK - Warwick aquifer, Pleistocene age.
112TRVL - Tongue River-Ludlow Member of Fort Union Formation.
125TGRV - Tongue River Member, Fort Union Formation.
112TILL - Till deposits, Pleistocene age.

* - Sampled by air-lift pump.
† - Sampled by air-squeeze pump.
E - Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	COLOR (PLAT- INUM COBALT UNITS)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	SODIUM+ POTAS- SIUM DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
DICKEY											
460706098041102	80-08-14	0	300	0	80	24	21	13	.5	26	5.0
460719098040202	79-11-14	10	270	8	48	36	22	27	.6	28	5.6
	80-02-14	5	280	25	53	37	23	15	.6	29	6.3
	80-05-07	5	300	38	55	39	21	13	.5	27	5.7
	80-08-14	0	290	36	52	38	21	13	.5	27	6.1
EDDY											
474347098524201	79-11-15	5	260	84	71	21	6.6	7	.2	8.8	2.2
	80-02-13	5	270	86	72	21	6.1	5	.2	8.3	2.2
	80-05-06	0	300	110	82	24	6.7	5	.2	9.0	2.3
	80-08-13	0	300	110	80	24	6.5	4	.2	8.7	2.2
474346098561401	79-11-15	5	310	68	82	25	43	31	1.1	47	4.1
	80-05-06	0	330	84	91	26	41	21	1.0	45	3.7
	80-08-13	0	310	48	82	25	40	22	1.0	44	4.1
475004098375601	79-11-15	5	190	0	54	13	3.1	5	.1	3.9	.8
	80-02-13	0	190	3	56	13	2.6	3	.1	3.5	.9
	80-05-06	5	200	16	57	13	2.8	3	.1	3.5	.7
	80-08-13	0	180	0	52	12	2.6	3	.1	3.3	.7
474747098354301	79-11-19	5	230	21	63	18	2.9	3	.1	3.6	.7
	80-05-14	5	210	16	56	16	2.8	3	.1	3.9	1.1
	80-08-14	5	240	19	66	18	2.9	3	.1	3.6	.7
474851098425501	79-11-19	45	340	0	84	31	22	12	.5	26	4.1
	80-02-06	5	200	15	55	14	8.5	9	.3	10	1.8
	80-05-14	20	300	6	84	21	20	13	.5	22	1.6
	80-08-14	0	200	14	57	15	8.8	8	.3	11	1.9
474628099010301	79-11-15	5	320	40	77	31	28	23	.7	35	6.8
	80-02-13	200	310	43	76	30	27	16	.7	32	5.3
	80-05-06	20	250	29	60	24	20	15	.6	24	4.4
	80-08-13	0	290	30	70	28	22	14	.6	27	5.1
GOLDEN VALLEY											
464716104003401	80-07-30	--	4300	4200	540	720	160	7	1.1	180	23
	80-07-30	--	4400	4100	560	720	160	7	1.1	180	23
464907103585501	79-10-10	--	120	0	23	14	660	96	27	670	7.8
	80-07-31	--	110	0	24	12	730	93	30	740	4.9
464946104014701	80-07-30	--	2000	1800	370	250	65	7	.6	76	11
	80-07-30	--	2000	1800	380	260	64	6	.6	75	11
465656104014001	80-07-29	--	45	0	9.0	5.3	610	96	40	610	3.8
	80-07-29	--	46	0	9.0	5.6	610	96	39	610	3.8
HETTINGER											
461348102121901	80-07-22	--	280	0	70	24	1300	91	34	1310	12
	80-07-22	--	270	0	67	24	1300	91	35	1310	12
461452102194601	80-06-16	--	190	0	26	29	570	87	18	580	6.5
	80-06-16	--	190	0	26	29	580	87	19	590	6.6
461755102163001	80-07-22	--	23	0	5.5	2.2	440	97	40	440	3.3
	80-07-22	--	21	0	4.9	2.2	440	97	42	440	3.2
462632102462301	80-07-23	--	12	0	3.1	1.0	320	98	40	320	2.0
	80-07-23	--	13	0	3.2	1.1	320	98	39	320	2.0
463143102444101	80-07-24	--	13	0	3.3	1.2	280	97	34	280	2.4
	80-07-24	--	13	0	3.3	1.2	280	97	34	280	2.3
462906102465201	80-07-23	--	190	0	44	18	340	80	11	340	4.1
	80-07-23	--	230	0	57	22	270	71	7.7	270	4.4
463050102492201	80-07-24	--	26	0	6.2	2.6	330	96	28	330	2.8
	80-07-24	--	26	0	6.1	2.5	340	96	29	340	2.8
462729102520101	80-06-26	--	160	0	34	18	960	93	33	970	6.8
	80-06-26	--	170	0	39	18	960	92	32	970	6.6
MCHENRY											
482028100475601	79-11-15	5	350	0	70	43	43	34	1.0	49	6.3
	80-02-11	5	360	38	71	44	44	21	1.0	49	5.0
	80-05-05	5	230	0	23	43	5.0	4	.1	11	6.8
	80-08-11	0	350	0	66	44	35	18	.8	41	5.9
482028100503201	79-11-15	5	380	28	77	45	35	28	.8	41	5.9
	80-02-11	2	390	81	84	44	31	15	.7	37	5.5
	80-05-05	5	400	48	85	45	30	14	.7	35	4.8
	80-08-11	0	390	18	86	42	29	14	.6	34	5.0
482405100474601	79-11-15	5	540	100	120	59	34	19	.6	39	4.9

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)
DICKEY											
460706098041102	80-08-14	310	49	4.2	.4	29	419	401	.57	.19	--
460719098040202	79-11-14	260	34	3.2	.3	27	328	351	.45	4.1	--
	80-02-14	260	40	4.1	.3	26	359	368	.49	4.9	--
	80-05-07	260	41	3.4	.3	25	388	383	.53	8.2	--
	80-08-14	250	39	3.9	.3	24	413	406	.56	16	--
EDDY											
474347098524201	79-11-15	180	49	4.2	.1	25	342	358	.47	16	--
	80-02-13	180	46	.5	.2	25	323	334	.44	12	--
	80-05-06	190	62	3.6	.2	24	376	364	.51	10	--
	80-08-13	190	52	4.3	.2	22	381	399	.52	21	--
474346098561401	79-11-15	240	160	20	.2	31	491	511	.67	.08	--
	80-05-06	250	130	20	.2	30	497	494	.68	.05	--
	80-08-13	260	110	22	.2	28	497	470	.68	.17	--
475004098375601	79-11-15	190	13	1.0	.2	26	221	226	.30	.17	--
	80-02-13	190	5.7	.1	.2	24	215	217	.29	.05	--
	80-05-06	180	6.0	.9	.2	23	224	212	.30	.03	--
	80-08-13	180	8.0	1.3	.2	25	215	210	.29	.02	--
474747098354301	79-11-19	210	22	1.4	.2	27	271	265	.37	.77	--
	80-05-14	190	20	.9	.2	23	249	239	.34	.95	--
	80-08-14	220	16	1.0	.2	31	290	273	.39	1.1	--
474851098425501	79-11-19	360	26	4.3	.2	32	442	421	.60	.04	--
	80-02-06	180	39	1.5	.1	25	232	254	.32	.05	--
	80-05-14	290	44	2.5	.2	31	395	379	.54	.03	--
	80-08-14	190	35	1.8	.2	29	252	263	.34	.01	--
474628099010301	79-11-15	280	97	5.5	.2	27	433	443	.59	.20	--
	80-02-13	270	88	5.3	.2	26	406	422	.55	.09	--
	80-05-06	220	57	2.9	.2	25	334	327	.45	.03	--
	80-08-13	260	83	4.9	.2	24	402	395	.55	.01	--
GOLDEN VALLEY											
464716104003401	80-07-30	160	4300	24	.1	29	--	5980	8.13	--	9.5
	80-07-30	220	4400	19	.2	35	--	6120	8.32	--	9.2
464907103585501	79-10-10	630	950	6.4	.6	8.1	--	2050	2.79	--	.61
	80-07-31	650	940	4.0	.7	5.1	--	2110	2.87	--	1.3
464946104014701	80-07-30	200	1900	17	.3	8.7	--	2750	3.74	--	1.3
	80-07-30	200	1900	16	.5	8.8	--	2770	3.77	--	1.2
465656104014001	80-07-29	1160	240	5.7	1.3	5.1	--	1590	2.16	--	1.3
	80-07-29	1070	290	6.9	1.3	5.3	--	1580	2.15	--	1.6
HETTINGER											
461348102121901	80-07-22	410	2600	4.5	.5	5.3	--	4270	5.81	--	1.4
	80-07-22	410	2700	3.3	.6	5.2	--	4360	5.93	--	1.4
461452102194601	80-06-16	560	800	1.8	.6	7.6	--	1780	2.42	--	.78
	80-06-16	560	790	2.4	.7	7.6	--	1780	2.42	--	.83
461755102163001	80-07-22	470	510	4.2	1.7	8.0	--	1260	1.71	--	.88
	80-07-22	480	510	4.2	1.7	8.0	--	1260	1.71	--	.75
462632102462301	80-07-23	530	350	4.0	1.3	6.1	--	1010	1.37	--	2.8
	80-07-23	530	340	4.1	1.3	6.3	--	997	1.36	--	1.0
463143102444101	80-07-24	530	110	4.8	1.2	6.0	--	728	.99	--	.74
	80-07-24	520	110	4.5	.9	6.0	--	721	.98	--	.83
462906102465201	80-07-23	520	410	5.6	1.1	11	--	1150	1.56	--	.91
	80-07-23	460	360	7.9	.9	11	--	1010	1.37	--	1.1
463050102492201	80-07-24	410	340	6.1	.9	10	--	946	1.29	--	.73
	80-07-24	430	330	6.6	1.2	9.8	--	959	1.30	--	.95
462729102520101	80-06-26	540	1700	3.8	1.0	8.9	--	3060	4.16	--	.18
	80-06-26	540	1700	3.8	1.0	8.8	--	3060	4.16	--	.27
MCHENRY											
482028100475601	79-11-15	380	72	1.4	.1	17	475	482	.65	.11	--
	80-02-11	320	72	1.4	.1	16	412	446	.56	.04	--
	80-05-05	240	13	1.0	.1	7.2	233	244	.32	.06	--
	80-08-11	380	67	1.1	.2	16	480	464	.65	.03	--
482028100503201	79-11-15	350	100	6.3	.2	20	507	501	.69	.15	--
	80-02-11	310	110	6.7	.2	13	452	482	.61	.02	--
	80-05-05	350	100	5.0	.2	19	505	501	.69	.10	--
	80-08-11	370	94	5.8	.2	21	522	506	.71	.01	--
482405100474601	79-11-15	440	160	14	.1	18	657	678	.89	.34	--

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)
DICKEY								
460706098041102	80-08-14	.010	.00	170	70	680	--	--
460719098040202	79-11-14	.040	.02	90	10	460	--	--
	80-02-14	.030	.02	110	20	170	--	--
	80-05-07	.040	.05	100	20	260	--	--
	80-08-14	.040	.01	150	<10	480	--	--
EDDY								
474347098524201	79-11-15	.030	.02	40	<10	190	--	--
	80-02-13	.070	.06	30	<10	100	--	--
	80-05-06	.030	.03	30	30	160	--	--
	80-08-13	.020	.00	110	10	210	--	--
474346098561401	79-11-15	.030	.01	80	550	690	--	--
	80-05-06	.040	.03	70	890	660	--	--
	80-08-13	.040	.01	70	870	650	--	--
475004098375601	79-11-15	.000	.01	20	30	20	--	--
	80-02-13	.010	.00	20	<10	30	--	--
	80-05-06	.010	.03	10	10	30	--	--
	80-08-13	.010	.00	50	<10	20	--	--
474747098354301	79-11-19	.010	.01	20	20	20	--	--
	80-05-14	.010	.01	40	10	10	--	--
	80-08-14	.010	.00	60	100	40	--	--
474851098425501	79-11-19	.080	.08	100	110	170	--	--
	80-02-06	.030	.02	40	30	80	--	--
	80-05-14	.020	.01	80	110	350	--	--
	80-08-14	.040	.03	90	30	80	--	--
474628099010301	79-11-15	.010	.00	70	1100	220	--	--
	80-02-13	.020	.01	60	610	470	--	--
	80-05-06	.040	.04	50	1000	180	--	--
	80-08-13	.010	.00	70	1000	--	--	--
GOLDEN VALLEY								
464716104003401	80-07-30	--	--	11000	59000	3800	0	10000
	80-07-30	--	--	12000	58000	3700	0	1100
464907103585501	79-10-10	--	--	530	10	20	0	480
	80-07-31	--	--	600	30	30	2	690
464946104014701	80-07-30	--	--	1100	800	1400	0	6600
	80-07-30	--	--	1100	1000	1400	0	6300
465656104014001	80-07-29	--	--	9000	50	10	0	300
	80-07-29	--	--	5100	150	10	0	320
HETTINGER								
461348102121901	80-07-22	--	--	570	30	170	0	2700
	80-07-22	--	--	550	110	170	0	2500
461452102194601	80-06-16	--	--	920	340	20	4	1000
	80-06-16	--	--	900	320	20	2	1100
461755102163001	80-07-22	--	--	660	20	10	13	180
	80-07-22	--	--	680	30	20	<10	170
462632102462301	80-07-23	--	--	580	60	7	<10	110
	80-07-23	--	--	580	90	9	<10	110
463143102444101	80-07-24	--	--	520	30	9	12	90
	80-07-24	--	--	520	20	8	<10	90
462906102465201	80-07-23	--	--	420	30	110	<10	820
	80-07-23	--	--	260	40	140	<10	1000
463050102492201	80-07-24	--	--	950	30	10	<10	220
	80-07-24	--	--	930	20	10	<10	220
462729102520101	80-06-26	--	--	560	80	60	0	1100
	80-06-26	--	--	550	60	60	0	1100
MCHENRY								
482028100475601	79-11-15	.060	.00	50	<10	3	--	--
	80-02-11	.010	.00	40	<10	4	--	--
	80-05-05	.010	.02	30	<10	2	--	--
	80-08-11	.010	.03	70	<10	6	--	--
482028100503201	79-11-15	.040	.00	80	170	410	--	--
	80-02-11	.010	.00	70	260	470	--	--
	80-05-05	.010	.02	70	100	520	--	--
	80-08-11	.010	.00	120	310	500	--	--
482405100474601	79-11-15	.010	.00	80	1300	950	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	COUNTY	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET)	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)
			MCHENRY						
482405100474601	157-078-19CCC	049	112TILL	20	80-02-11	1445	990	8.3	4.5
		049	112TILL	20	80-05-05	1400	1030	E7.6	3.5
		049	112TILL	20	80-08-12	1330	940	7.4	10.0
482357100502302	157-079-26BBB2	049	112TILL	12	79-11-15	1530	650	7.6	9.5
		049	112TILL	12	80-02-11	1530	700	7.9	3.5
		049	112TILL	12	80-05-05	1430	680	E8.0	4.0
		049	112TILL	12	80-08-12	1230	715	7.6	10.5
483240100503201	158-079-03AAA	049	112TILL	12	79-11-16	1115	E11240	7.4	8.5
		049	112TILL	12	80-02-12	1230	11000	7.4	3.5
		049	112TILL	12	80-05-06	1000	9500	E7.7	3.5
		049	112TILL	12	80-08-12	1600	10000	7.3	8.5
483003100503201	158-079-22AAA1	049	112LKSO	20	79-11-16	1200	530	8.0	8.5
		049	112LKSO	20	80-02-11	1600	491	8.7	4.5
		049	112LKSO	20	80-05-06	0915	450	E8.3	5.0
		049	112LKSO	20	80-08-12	1400	420	8.2	8.0
483003100480401	158-079-24AAB	049	112TILL	16	79-11-16	1145	590	7.8	8.5
		049	112TILL	16	80-02-12	1130	537	8.0	6.5
		049	112TILL	16	80-05-06	0930	530	E7.9	4.5
		049	112TILL	16	80-08-12	1500	568	7.6	7.5
482825100565502	158-080-25CCC2	049	112TILL	12	79-11-16	1315	2300	7.6	8.0
		049	112TILL	12	80-02-12	1045	2250	7.9	4.0
		049	112TILL	12	80-05-05	1515	2150	E7.8	4.0
		049	112TILL	12	80-08-12	1130	2120	7.5	8.5
482825101100202	158-080-29DDD2	049	112TILL	12	79-11-16	1245	680	7.7	8.5
		049	112TILL	12	80-02-12	1015	645	7.4	4.5
		049	112TILL	12	80-05-05	1545	670	E7.6	4.0
		049	112TILL	12	80-08-12	1045	675	7.3	7.0
483418100475501	159-079-25AAD	049	112TILL	12	79-11-16	1045	3100	7.4	9.0
		049	112TILL	12	80-02-11	1300	3380	7.2	4.0
		049	112TILL	12	80-05-06	1030	3600	E7.5	3.5
		049	112TILL	12	80-08-12	1630	2070	7.5	10.5
483247100593201	159-080-34CCC	049	112TILL	12	79-11-16	1000	2200	7.2	8.0
		049	112TILL	12	80-05-05	1615	2500	E7.5	3.0
		049	112TILL	12	80-08-12	1000	2840	7.0	8.5
			MERCER						
472528101530202	146-088-27CDD2	* 057	112APCK	64	80-06-30	1410	1175	8.1	9.0
		† 057	112APCK	64	80-06-30	1550	1180	8.1	12.5
			OLIVER						
471223101460201	143-087-18BCC	* 065	125SNLB	33	80-07-02	1335	3300	E7.7	14.5
		† 065	125SNLB	33	80-07-02	1455	3250	7.5	17.5
471150101460202	143-087-19BBB2	* 065	125SNLB	44	80-07-01	1050	2200	8.0	9.5
		† 065	125SNLB	44	80-07-01	1200	2200	7.9	11.5
			SLOPE						
462010103233501	133-101-17ABB	* 087	125TRVL	65	80-06-17	1550	2500	8.1	8.5
		† 087	125TRVL	65	80-06-17	1630	2500	7.6	11.5
461832103245101	133-101-19DCC	* 087	125TRVL	101	80-06-17	1240	4900	8.6	12.0
		† 087	125TRVL	101	80-06-17	1405	4900	7.4	15.5
462441103230601	134-101-17DDD	* 087	125TRVL	160	80-06-17	2020	940	8.4	11.0
		† 087	125TRVL	160	80-06-17	2150	940	7.5	12.0
462527103245001	134-101-18ABB	* 087	125TRVL	75	80-06-18	0810	2200	8.1	9.5
		† 087	125TRVL	75	80-06-18	1050	2150	7.2	12.5
463746102562001	136-098-01BAA	* 087	125TRVL	220	80-06-19	1225	1460	8.2	10.0
		† 087	125TRVL	220	80-06-19	1445	1460	7.8	11.5
463745103003801	136-098-05AAA	* 087	125TRVL	207	80-06-19	1620	3550	8.6	9.5
		† 087	125TRVL	207	80-06-19	1840	3500	8.4	11.0
463559102581001	136-098-15AAA	* 087	125TRVL	151	80-06-18	1555	1590	8.6	11.0
		† 087	125TRVL	151	80-06-18	1820	1590	8.5	15.5
463532102591501	136-098-15CBB	087	125TRVL	104	80-06-18	1225	1780	8.2	9.0
463538103053501	136-099-15ADD	* 087	125TRVL	88	80-06-26	1215	3700	8.4	9.0
		† 087	125TRVL	88	80-06-26	1320	3700	8.1	11.0
463417103080401	136-099-20DDD	* 087	125TRVL	116	80-06-25	1130	1650	8.9	15.5
		† 087	125TRVL	116	80-06-25	1510	1600	8.9	17.0
463257103102301	136-099-31BCC	* 087	125TRVL	135	80-06-24	1210	4000	8.7	10.0
		† 087	125TRVL	135	80-06-24	1340	4000	8.4	14.0
463231103041101	136-099-36CCC	* 087	125TRVL	144	80-06-24	1535	1930	8.9	10.0
		† 087	125TRVL	144	80-06-24	1615	1700	8.9	12.5
			STARK						
465145102583601	139-097-07CCC	089	125SNLB	37	80-07-17	1300	2800	E8.1	12.0

Geologic unit (aquifer):

112TILL - Till deposits, Pleistocene age.
112LKSO - Lake Souris aquifer, Pleistocene age.
112APCK - Antelope Creek, Pleistocene age.
125SNLB - Sentinel Butte Member, Fort Union Formation.
125TRVL - Tongue River-Ludlow Member, Fort Union Formation.

* - Sampled by air-lift pump.
† - Sampled by air-squeeze pump.
E - Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	COLOR (PLAT-INUM COBALT UNITS)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
MCHENRY											
482405100474601	80-02-11	5	540	200	120	58	30	11	.6	35	5.1
	80-05-05	10	590	160	140	58	30	10	.5	34	4.3
	80-08-12	0	450	27	100	48	27	12	.6	31	4.0
482357100502302	79-11-15	5	370	140	92	34	8.4	7	.2	11	2.2
	80-02-11	0	330	160	84	30	6.9	4	.2	8.5	1.6
	80-05-05	0	320	110	74	33	7.2	5	.2	9.0	1.8
	80-08-12	0	360	160	90	32	7.6	4	.2	10	2.4
483240100503201	79-11-16	25	7700	7100	120	1800	800	18	4.0	810	11
	80-02-12	15	8400	7800	390	1800	720	16	3.4	730	11
	80-05-06	15	7100	6400	360	1500	830	20	4.3	840	9.9
	80-08-12	10	7000	6400	490	1400	740	19	3.9	750	12
483003100503201	79-11-16	5	290	11	62	33	12	14	.3	15	3.0
	80-02-11	0	260	60	53	31	11	8	.3	14	3.0
	80-05-06	0	240	20	40	34	13	10	.4	17	3.6
	80-08-12	0	220	4	42	29	9.9	9	.3	14	3.7
483003100480401	79-11-16	5	320	44	82	29	12	11	.3	15	2.7
	80-02-12	2	290	29	81	21	8.0	6	.2	10	2.0
	80-05-06	5	280	15	81	20	7.3	5	.2	9.5	2.2
	80-08-12	0	280	6	79	19	6.3	5	.2	8.3	2.0
482825100565502	79-11-16	10	1200	740	180	170	190	48	2.4	190	4.0
	80-02-12	5	1100	700	140	170	180	27	2.4	180	3.8
	80-05-05	5	1000	650	150	160	170	26	2.3	170	4.2
	80-08-12	0	950	560	150	140	170	28	2.4	170	3.8
482825101100202	79-11-16	10	320	62	73	34	26	22	.6	38	12
	80-02-12	10	300	64	69	32	24	14	.6	34	10
	80-05-05	10	320	60	72	34	28	15	.7	39	11
	80-08-12	0	330	67	75	34	24	13	.6	35	10
483418100475501	79-11-16	10	1800	1300	270	280	220	21	2.2	230	11
	80-02-11	5	2100	--	310	310	230	20	2.2	240	11
	80-05-06	5	2200	1600	340	320	220	18	2.1	230	11
	80-08-12	0	1100	490	140	170	140	22	1.9	150	7.2
483247100593201	79-11-16	5	1700	1400	380	180	37	5	.4	48	11
	80-05-05	0	1700	1400	370	190	40	5	.4	48	8.0
	80-08-12	0	2000	1700	470	190	47	5	.5	58	11
MERCER											
472528101530202	80-06-30	--	430	200	100	43	110	36	2.3	110	5.4
	80-06-30	--	430	160	99	43	100	34	2.1	100	5.2
OLIVER											
471223101460201	80-07-02	--	1800	1700	460	160	180	18	1.8	190	8.8
	80-07-02	--	1800	1700	460	160	180	18	1.8	190	8.8
471150101460202	80-07-01	--	1400	1100	440	64	37	6	.4	43	6.0
	80-07-01	--	1400	1100	450	69	39	6	.5	45	5.7
SLOPE											
462010103233501	80-06-17	--	490	31	110	52	420	65	8.3	430	6.5
	80-06-17	--	490	0	110	51	410	64	8.1	420	6.3
461832103245101	80-06-17	--	350	0	66	44	1000	86	23	1015	15
	80-06-17	--	350	0	68	44	1000	85	23	1015	15
462441103230601	80-06-17	--	200	0	48	20	140	59	4.3	150	6.3
	80-06-17	--	200	0	48	20	140	59	4.3	150	6.3
462527103245001	80-06-18	--	620	74	120	78	300	50	5.2	320	16
	80-06-18	--	650	0	130	78	300	49	5.1	320	22
463746102562001	80-06-19	--	110	0	22	13	310	85	13	320	7.3
	80-06-19	--	110	0	23	13	300	84	12	310	7.4
463745103003801	80-06-19	--	67	0	13	8.3	800	96	43	810	5.8
	80-06-19	--	69	0	14	8.2	800	96	42	810	6.0
463559102581001	80-06-18	--	19	0	5.1	1.5	330	97	33	330	4.2
	80-06-18	--	19	0	5.0	1.6	260	96	26	260	3.1
463532102591501	80-06-18	--	18	0	4.7	1.5	440	98	45	440	2.8
463538103053501	80-06-26	--	76	0	18	7.3	820	96	41	830	6.6
	80-06-26	--	76	0	18	7.3	810	95	41	820	6.6
463417103080401	80-06-25	--	11	0	3.0	.7	270	98	36	270	1.9
	80-06-25	--	11	0	3.0	.7	290	98	39	290	2.1
463257103102301	80-06-24	--	30	0	6.0	3.5	900	98	72	900	3.7
	80-06-24	--	30	0	6.0	3.5	900	98	72	900	3.4
463231103041101	80-06-24	--	12	0	2.8	1.3	420	98	52	420	2.2
	80-06-24	--	8	0	2.0	.7	390	99	60	390	2.0
STARK											
465145102583601	80-07-17	--	38	0	8.0	4.4	620	97	44	620	4.4

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)
					MCHENRY						
482405100474601	80-02-11	340	150	11	.1	12	585	592	.80	.17	--
	80-05-05	430	210	11	.2	18	749	734	1.02	.05	--
	80-08-12	420	100	10	.2	16	591	563	.80	.22	--
482357100502302	79-11-15	230	100	2.1	.3	19	472	480	.64	19	--
	80-02-11	170	110	2.1	.2	13	414	421	.56	16	--
	80-05-05	210	95	1.8	.3	15	376	384	.51	6.7	--
	80-08-12	200	110	1.8	.3	18	489	471	.67	20	--
483240100503201	79-11-16	590	9100	79	.2	27	14200	12400	19.3	18	--
	80-02-12	540	8400	75	.2	29	12400	11800	16.9	15	--
	80-05-06	670	7700	81	.3	20	11700	11000	15.9	12	--
	80-08-12	600	7300	63	.3	16	12000	10400	16.3	14	--
483003100503201	79-11-16	280	35	3.9	.1	11	332	329	.45	.05	--
	80-02-11	200	43	2.5	.1	6.4	259	275	.35	1.1	--
	80-05-06	220	38	2.2	.2	7.8	261	271	.36	.05	--
	80-08-12	220	30	2.8	.2	8.8	278	261	.38	.37	--
483003100480401	79-11-16	280	71	1.9	.2	21	406	390	.55	.23	--
	80-02-12	260	36	.8	.2	17	324	324	.44	.29	--
	80-05-06	270	29	1.2	.2	22	332	326	.45	.03	--
	80-08-12	270	36	1.3	.2	20	343	330	.47	.69	--
482825100565502	79-11-16	410	980	15	.4	23	2030	1930	2.76	28	--
	80-02-12	350	920	16	.4	23	1840	1780	2.50	26	--
	80-05-05	380	960	13	.3	24	1820	1820	2.48	25	--
	80-08-12	390	800	13	.4	13	1700	1650	2.31	28	--
482825101100202	79-11-16	260	120	3.9	.1	24	472	453	.64	.47	--
	80-02-12	240	130	3.5	.2	22	403	437	.55	.11	--
	80-05-05	260	140	3.3	.2	21	428	467	.58	.08	--
	80-08-12	260	120	3.5	.2	22	438	447	.60	.13	--
483418100475501	79-11-16	550	1700	36	.7	28	2940	2880	4.00	.33	--
	80-02-11	--	1800	38	.6	32	3220	2750	4.38	.18	--
	80-05-06	530	2000	43	.6	26	3470	3280	4.72	.22	--
	80-08-12	560	730	15	.7	16	1630	1560	2.22	.59	--
483247100593201	79-11-16	310	1400	6.2	.2	29	2170	2240	2.95	1.2	--
	80-05-05	290	1400	5.4	.2	24	2370	2210	3.22	.10	--
	80-08-12	290	1700	7.5	.2	19	2750	2620	3.74	.03	--
					MERCER						
472528101530202	80-06-30	--	230	2.3	.4	24	--	655	.89	--	.92
	80-06-30	--	180	2.4	.4	24	--	618	.84	--	1.1
					OLIVER						
471223101460201	80-07-02	88	2100	11	.4	39	--	3020	4.11	--	.50
	80-07-02	82	2000	4.8	.4	39	--	2910	3.96	--	.45
471150101460202	80-07-01	270	1100	11	.3	13	--	1840	2.50	--	1.5
	80-07-01	270	1100	13	.3	12	--	1850	2.52	--	1.0
					SLOPE						
462010103233501	80-06-17	460	850	5.6	.2	10	--	1730	2.35	--	.59
	80-06-17	490	860	5.6	.2	9.9	--	1750	2.38	--	.54
461832103245101	80-06-17	770	1700	5.0	.2	17	--	3310	4.50	--	1.1
	80-06-17	810	1700	4.1	.2	17	--	3340	4.54	--	1.2
462441103230601	80-06-17	290	200	.9	.4	11	--	602	.82	--	1.8
	80-06-17	310	200	1.0	.4	11	--	614	.84	--	.68
462527103245001	80-06-18	550	610	7.4	.1	9.3	--	1480	2.01	--	1.1
	80-06-18	660	580	6.2	.1	9.3	--	1530	2.08	--	1.1
463746102562001	80-06-19	450	300	1.3	.2	7.9	--	933	1.27	--	.59
	80-06-19	450	300	1.3	.2	8.0	--	925	1.26	--	3.1
463745103003801	80-06-19	720	970	2.5	1.7	11	--	2250	3.06	--	2.4
	80-06-19	820	970	1.9	1.8	11	--	2310	3.14	--	.86
463559102581001	80-06-18	540	130	4.3	3.5	8.8	--	813	1.11	--	.61
	80-06-18	640	160	4.9	4.1	6.5	--	831	1.13	--	.50
463532102591501	80-06-18	560	370	3.7	1.2	11	--	1170	1.59	--	.82
463538103053501	80-06-26	790	1100	2.9	.4	7.5	--	2440	3.32	--	1.4
	80-06-26	780	1100	2.9	.4	7.4	--	2420	3.29	--	1.0
463417103080401	80-06-25	540	130	10	.3	.8	--	778	1.06	--	1.1
	80-06-25	432	140	110	.2	.8	--	872	1.19	--	1.3
463257103102301	80-06-24	610	1400	4.5	1.3	8.3	--	2700	3.67	--	.62
	80-06-24	610	1400	3.4	1.4	8.2	--	2690	3.66	--	1.3
463231103041101	80-06-24	490	450	1.5	.7	9.5	--	1180	1.60	--	.82
	80-06-24	510	360	1.2	.7	9.6	--	1070	1.46	--	.31
					STARK						
465145102583601	80-07-17	580	780	4.5	1.0	13	--	1790	2.43	--	1.1

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHOPH OSPHATE DISSOL. (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)
MCHENRY								
482405100474601	80-02-11	.010	.00	70	20	630	--	--
	80-05-05	.010	.01	60	2400	1200	--	--
	80-08-12	.000	.00	120	3100	660	--	--
482357100502302	79-11-15	.000	.00	30	<10	50	--	--
	80-02-11	.010	.00	20	20	4	--	--
	80-05-05	.010	.01	20	<10	4	--	--
	80-08-12	.000	.00	130	20	7	--	--
483240100503201	79-11-16	.010	.02	230	50	30	--	--
	80-02-12	.010	.01	180	70	30	--	--
	80-05-06	.020	.01	120	700	30	--	--
	80-08-12	.010	.00	200	90	30	--	--
483003100503201	79-11-16	.000	.00	40	10	240	--	--
	80-02-11	.010	.00	30	<10	70	--	--
	80-05-06	.010	.01	30	<10	110	--	--
	80-08-12	.020	.00	40	10	150	--	--
483003100480401	79-11-16	.000	.00	40	110	350	--	--
	80-02-12	.000	.00	40	<10	280	--	--
	80-05-06	.010	.01	30	50	370	--	--
	80-08-12	.000	.00	40	330	390	--	--
482825100565502	79-11-16	.000	.00	120	10	10	--	--
	80-02-12	.010	.00	110	20	10	--	--
	80-05-05	.010	.01	100	60	0	--	--
	80-08-12	.010	.00	120	30	0	--	--
482825101100202	79-11-16	.050	.01	50	920	410	--	--
	80-02-12	.040	.02	40	730	320	--	--
	80-05-05	.050	.02	50	700	370	--	--
	80-08-12	.040	.00	70	640	360	--	--
483418100475501	79-11-16	.000	.00	190	470	100	--	--
	80-02-11	.010	.00	160	440	90	--	--
	80-05-06	.010	.01	130	480	120	--	--
	80-08-12	.000	.00	160	50	0	--	--
483247100593201	79-11-16	.000	.00	110	20	20	--	--
	80-05-05	.010	.01	70	40	10	--	--
	80-08-12	.010	.00	130	50	10	--	--
MERCER								
472528101530202	80-06-30	--	--	170	<10	490	<10	1000
	80-06-30	--	--	160	<10	650	<10	1000
OLIVER								
471223101460201	80-07-02	--	--	100	580	6600	0	1600
	80-07-02	--	--	90	70	6400	0	1500
471150101460202	80-07-01	--	--	150	250	370	3	1000
	80-07-01	--	--	150	1700	300	0	1000
SLOPE								
462010103233501	80-06-17	--	--	570	0	230	0	1700
	80-06-17	--	--	590	30	220	0	1700
461832103245101	80-06-17	--	--	1500	20	140	0	1600
	80-06-17	--	--	1600	100	160	0	1600
462441103230601	80-06-17	--	--	110	<10	30	<10	490
	80-06-17	--	--	130	150	30	11	490
462527103245001	80-06-18	--	--	870	10	230	0	2400
	80-06-18	--	--	930	350	270	0	2400
463746102562001	80-06-19	--	--	390	<10	60	<10	590
	80-06-19	--	--	410	<10	60	<10	620
463745103003801	80-06-19	--	--	660	50	30	1	570
	80-06-19	--	--	700	40	30	2	550
463559102581001	80-06-18	--	--	400	190	20	<10	150
	80-06-18	--	--	480	80	20	<10	120
463532102591501	80-06-18	--	--	540	30	8	<10	150
463538103053501	80-06-26	--	--	1200	10	40	0	580
	80-06-26	--	--	1100	20	50	0	570
463417103060401	80-06-25	--	--	600	130	30	0	120
	80-06-25	--	--	590	120	20	2	110
463257103102301	80-06-24	--	--	610	40	40	0	200
	80-06-24	--	--	690	80	40	1	260
463231103041101	80-06-24	--	--	1000	20	6	<10	90
	80-06-24	--	--	1000	10	4	14	70
STARK								
465145102583601	80-07-17	--	--	560	80	10	0	330

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	COUNTY	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET)	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)
			STARK						
465053103044601	139-098-17CCD	089	125SNLB	164	80-09-30	1445	930	7.2	24.0
465819103010701	140-098-02CBB	089	125SNLB	151	80-07-16	1215	1800	7.5	11.5
465705103011601	140-098-10DDD	089	125SNLB	192	80-07-16	1100	1750	8.0	11.0
465658103034801	140-098-17AAA	089	125SNLB	140	80-07-16	0930	1880	8.2	12.0
465511103011601	140-098-27AAA1	089	125SNLB	147	80-07-16	1430	2200	E8.2	12.0
			WILLIAMS						
481148103013401	154-096-04AAB	105	--	33	80-09-30	1515	2000	7.7	8.0
481457103025301	155-096-17ADC	* 105	--	141	80-09-30	1045	E2040	8.9	6.5
		† 105	--	141	80-09-30	1140	E2000	8.6	11.0
481412103023301	155-096-21BCB1	* 105	--	88	80-09-29	1310	1800	8.3	8.5
		† 105	--	88	80-09-29	1430	1830	7.9	10.5
481412103023302	155-096-21BCB2	105	--	58	80-09-29	1115	1750	8.5	10.0
481300103022301	155-096-28CBD	* 105	--	44	80-09-30	1305	1980	8.3	9.0
		† 105	--	44	80-09-30	1400	E2060	7.6	11.0
			WIBAUX						
470007104040002	14- 61-06CCA2	* 109	--	124	80-07-29	1250	4100	8.7	9.5
		† 109	--	124	80-07-29	1400	4200	8.6	13.0
465300104040001	13N61E18CCA 01	* 109	--	60	80-07-30	1000	3400	8.3	9.0
		† 109	--	60	80-07-30	1130	3350	8.2	11.0
465900104040001	14N60E10DDD 01	* 109	--	47	80-07-29	0925	1000	7.9	8.5
		† 109	--	47	80-07-29	1030	1000	8.1	13.0

STATION NUMBER	DATE OF SAMPLE	COLOR (PLAT-INUM COBALT UNITS)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
					STARK						
465053103044601	80-09-30	--	140	0	25	19	140	67	5.1	150	8.7
465819103010701	80-07-16	--	7	0	2.0	.5	410	99	67	410	1.5
465705103011601	80-07-16	--	36	0	8.0	3.9	370	94	27	380	12
465658103034801	80-07-16	--	4	0	1.1	.2	420	99	97	420	1.3
465511103011601	80-07-16	--	44	0	10	4.5	540	96	36	540	3.0
					WILLIAMS						
481148103013401	80-09-30	--	470	0	77	67	360	62	7.2	370	10
481457103025301	80-09-30	--	480	0	77	69	310	58	6.2	320	11
	80-09-30	--	490	0	79	71	320	58	6.3	330	11
481412103023301	80-09-29	--	330	0	59	43	320	67	7.7	330	11
	80-09-29	--	350	0	63	46	330	67	7.7	340	11
481412103023302	80-09-29	--	470	30	84	63	260	54	5.2	270	10
481300103022301	80-09-30	--	230	0	44	29	430	80	12	440	8.7
	80-09-30	--	210	0	41	27	430	81	13	440	8.7
					WIBAUX						
470007104040002	80-07-29	--	160	0	32	19	950	93	33	960	5.3
	80-07-29	--	160	0	32	20	950	92	32	960	5.5
465300104040001	80-07-30	--	1000	220	200	120	450	49	6.2	460	12
	80-07-30	--	970	170	190	120	460	50	6.4	470	11
465900104040001	80-07-29	--	580	290	130	62	11	4	.2	15	3.6
	80-07-29	--	590	290	130	63	12	4	.2	16	3.8

* - Sampled by air-lift pump.
† - Sampled by air-squeeze pump.
E - Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)
STARK											
465053103044601	80-09-30	150	260	5.2	.5	6.2	--	556	.76	--	1.3
465819103010701	80-07-16	710	340	14	15	57	--	1270	1.73	--	1.0
465705103011601	80-07-16	570	340	3.5	.6	.5	--	1080	1.47	--	.87
465658103034801	80-07-16	510	380	1.6	.6	10	--	1120	1.52	--	.37
465511103011601	80-07-16	1200	950	56	29	260	--	2580	3.51	--	3.0
WILLIAMS											
481148103013401	80-09-30	560	690	7.9	.4	18	--	1570	2.14	--	.42
481457103025301	80-09-30	580	650	6.2	.3	30	--	1480	2.01	--	2.2
	80-09-30	530	650	6.2	.3	30	--	1490	2.03	--	2.1
481412103023301	80-09-29	470	580	4.8	.4	18	--	1320	1.80	--	1.1
	80-09-29	470	600	4.8	.4	20	--	1360	1.85	--	.90
481412103023302	80-09-29	440	530	6.7	.3	17	--	1240	1.69	--	.29
481300103022301	80-09-30	710	430	5.1	.8	11	--	1390	1.89	--	1.1
	80-09-30	750	430	5.6	.8	11	--	1410	1.92	--	.96
WIBAUX											
470007104040002	80-07-29	760	1400	5.0	.8	5.7	--	2880	3.92	--	1.3
	80-07-29	810	1400	1.8	.7	5.8	--	2900	3.94	--	1.2
465300104040001	80-07-30	780	1200	6.0	.3	7.4	--	2470	3.36	--	1.5
	80-07-30	800	1200	5.8	.3	7.4	--	2480	3.37	--	1.6
465900104040001	80-07-29	290	310	4.6	.1	15	--	713	.97	--	1.1
	80-07-29	300	300	4.5	.2	11	--	712	.97	--	1.3

STATION NUMBER	DATE OF SAMPLE	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHOPHOSPHATE DISSOL. (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	STRONTIUM, DISSOLVED (UG/L AS SR)
STARK								
465053103044601	80-09-30	--	--	160	640	60	<10	410
465819103010701	80-07-16	--	--	1300	320	20	3	--
465705103011601	80-07-16	--	--	920	210	10	9	200
465658103034801	80-07-16	--	--	870	30	6	<10	20
465511103011601	80-07-16	--	--	1300	1900	40	0	--
WILLIAMS								
481148103013401	80-09-30	--	--	180	340	280	2	1100
481457103025301	80-09-30	--	--	300	50	110	2	1000
	80-09-30	--	--	290	850	120	2	1000
481412103023301	80-09-29	--	--	320	20	110	<10	1100
	80-09-29	--	--	280	150	120	<10	1200
481412103023302	80-09-29	--	--	220	<10	100	<10	990
481300103022301	80-09-30	--	--	320	30	70	0	650
	80-09-30	--	--	380	150	70	0	630
WIBAUX								
470007104040002	80-07-29	--	--	540	30	30	4	1000
	80-07-29	--	--	540	40	40	2	820
465300104040001	80-07-30	--	--	1300	50	330	0	4500
	80-07-30	--	--	500	50	180	0	1400
465900104040001	80-07-29	--	--	520	30	180	<10	1500
	80-07-29	--	--	1300	40	310	<10	5300

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	LOCAL IDENT-I-FIER	COUNTY	GEO-LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH FIELD (UNITS) (00400)	TEMPER-ATURE, WATER (DEG C) (00010)
			BOWMAN						
460705103041101	130-099-04BAA	011	125TRVL	47	79-11-15	1400	4500	7.4	12.0
460856103024401	131-099-22DCC	011	125TRVL	76	79-11-14	1530	3550	7.1	10.0
460804103010101	131-099-26DDD	011	125TRVL	76	79-11-15	1545	1450	8.4	10.0

STATION NUMBER	DATE OF SAMPLE	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA) (00933)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY (MG/L AS CACO3) (00410)
					BOWMAN						
460705103041101	79-11-15	1600	1100	290	200	540	61	6.0	550	14	490
460856103024401	79-11-14	790	420	150	100	910	71	14	920	14	370
460804103010101	79-11-15	27	0	5.5	3.2	350	96	29	350	3.1	420

STATION NUMBER	DATE OF SAMPLE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
					BOWMAN						
460705103041101	79-11-15	2200	34	.4	.3	7.7	3560	3580	4.84	.03	.67
460856103024401	79-11-14	2300	8.4	.1	.1	14	3830	3730	5.21	.04	1.8
460804103010101	79-11-15	360	6.2	2.2	.1	9.7	960	994	1.31	.02	.68

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

STATION NUMBER	DATE OF SAMPLE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
						BOWMAN					
460705103041101	79-11-15	.010	0	3	300	580	0	0	0	80	0
460856103024401	79-11-14	.020	0	0	200	3700	1	0	0	1600	1
460804103010101	79-11-15	.150	30	2	200	1000	0	0	0	120	0

STATION NUMBER	DATE OF SAMPLE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)
						BOWMAN					
460705103041101	79-11-15	100	390	.2	5	0	3200	30	<75	<.4	22
460856103024401	79-11-14	280	590	.0	0	0	2800	120	<88	.6	<19
460804103010101	79-11-15	20	0	.2	0	0	140	0	<18	<1.4	<5.8

STATION NUMBER	DATE OF SAMPLE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)
				BOWMAN				
460705103041101	79-11-15	<.4	20	<.4	.15	.39	38	.00
460856103024401	79-11-14	1.5	<17	1.6	.37	26	19	.00
460804103010101	79-11-15	<1.5	<5.4	<1.6	.08	.36	21	.00

INDEX

Page
Accuracy of field data and computed results----- 24
Acknowledgment------------------------------------ 3
Acre-foot (AC-FT, acre-ft), definition of------- 4
Adams County, miscellaneous ground-water quality sites--------------------------------------783-786
Alderin Creek near Fort Clark--------------------445-451
Alderin Creek basin, gaging-station records for--------------------------------445-451
Algae, definition of----------------------------- 4
  blue-green, definition of---------------------- 11
  green, definition of--------------------------- 11
Algal growth potential (AGP), definition of----- 4
Alkali Creek near Bowman------------------------645,738
Analyses of samples collected at miscellanous ground-water quality sites-----------------783-798
Analyses of samples collected at miscellaneous surface-water quality sites
    (specific conductance)--------------------762-771
    (chemical analyses)-----------------------741-761
Analyses of samples collected at partial-record water-quality lake stations----------------646-692
Antelope Creek above Hazen-----------------------422-426
Apple Creek near Menoken-------------------------555-558
Apple Creek basin, gaging-station records in----555-558
  partial-record water-quality analyses of lakes in------------------------------673-674
Aquifer, definition of---------------------------673-674
Artesian, definition of-------------------------- 4
Artificial substrate, definition of------------- 4
Ash mass, definition of------------------------- 14
  5

Bacteria, definition of------------------------- 4
  Fecal coliform, definition of----------------- 5
  Fecal streptococcal, definition of------------ 5
  Total coliform, definition of----------------- 4
Baldhill Creek near Dazey----------------------- 74-78
Bear Creek near Oakes---------------------------633,771
Bear Den Creek near Mandaree--------------------284-288
Bear Den Creek basin, gaging station records in---------------------------------------284-288
Beaver Creek (tributary to Goose River) near Finley------------------------------115-118
Beaver Creek (tributary to Little Missouri River) at Wibaux, MT-----------------------301-304
  near Trotters---------------------------------310-319
  near Wibaux, MT------------------------------- 644
Beaver Creek (tributary to Missouri River) at Linton-------------------------------------612,771
  near Ray--------------------------------------273-280
Beaver Creek basin, gaging-station records in-------------------------------273-280,612
  miscellaneous temperature measurements and field determinations----------------------- 771
  partial-record water-quality analyses of lakes in------------------------------------681-682
Beaver Lake (Deep) near Burnstad---------------- 681
Beaver Lake (Shallow) near Burnstad------------681-682
Bed material, definition of--------------------- 5
Bedload, definition of-------------------------- 12
Benthic organisms, definition of---------------- 5
Benson County, ground-water levels in----------- 772
  miscellaneous ground-water quality sites------783-786
Big Coulee (Devils Lake basin), at Grahams Island, Inlet to Devils Lake, nr Fort Totten------------------------------- 654
  near Churchs Ferry-------------------65,741-743,762
Biochemical oxygen demand (BOD), definition of----------------------------- 5
Biomass, definition of-------------------------- 5
  Ash mass, definition of----------------------- 5
  Dry mass, definition of----------------------- 6
  Organic mass, definition of------------------- 6
  Wet mass, definition of----------------------- 6
Blue-green algae, definition of----------------- 11
Bois de Sioux River
    near White Rock, SD------------------------- 34

Bottineau County, miscellaneous ground-water quality sites--------------------------------783-786
Boundary Creek near Landa---------------223,750-752,767
Bowman County, ground-water levels in----------- 773
  miscellaneous ground-water quality sites------797-798
Bowman-Haley Lake near Haley--------------------613,740
Brush Creek near Beulah-------------------------376-384
Buffalo Creek near Washburn---------------------462-468
Buffalo Creek Tributary near Gascoyne-----------615-621
Buffalo Creek basin, gaging-station records in--462-468
Buffalo Lodge Lake (Deep) near Riga------------- 657
Buffalo Lodge Lake (Shallow) near Riga----------657-658
Burke County, miscellaneous ground-water quality sites--------------------------------783-786
Burleigh County, ground-water levels in--------- 773
Burnt Creek near Bismarck---------------495,753-755,769
Burnt Creek basin, gaging-station records in-----------------------------------495,753-755
  miscellaneous temperature measurements and field determinations----------------------- 769

Camp Hump Reservoir (Deep) near Sentinel Butte-- 661
Camp Hump Reservoir (Shallow), near Sentinel Butte-------------------------- 662
Cannonball River, at Breien---------------------601-611
  at New England--------------------------------560-569
  at Regent-------------------------------------577-586
  below Bentley-----------------------587,756-758,770
Cannonball River basin, gaging-station records in-------------------------------------560-611
  miscellaneous surface-water quality sites-----756-758
  miscellaneous temperature measurements and field determinations----------------------- 770
  partial-record water-quality analyses of lakes in-------------------------------------674-680
Cart Creek above Crystal--------------------747-749,765
  at Mountain-------------------------------129,701-702
  near Crystal---------------------------------- 643
  near Hoople---------------------------643,747-749,765
Cass County, ground-water levels in------------- 773
Cedar Creek, near Haynes----------------589,756-758,770
  near Raleigh----------------------------600,756-758,770
  White Butte Fork, near Scranton-------588,756-758,770
Cells/volume, definition of--------------------- 6
Cfs-day, definition of-------------------------- 6
Charbonneau Creek nr Charbonneau----------------252-253
Chemical analyses of ground-water wells---------783-798
Chemical oxygen demand (COD), definition of----- 6
Chlorophyll, definition of---------------------- 6
Coal Bank Creek near Havelock-------------------570-576
Coal Creek near Stanton-------------------------439-443
Coal Lake Coulee basin, gaging station records for---------------------------------458-461
Coal Lake Coulee near Hensler-------------------458-461
Coliform bacteria, fecal, definition of--------- 5
  fecal streptococcal, definition of------------ 5
  total, definition of-------------------------- 4
Coliform organisms, definition of--------------- 6
Collection and computation of surface-water data 19
Collection and examination of water-quality data 25
Collection of ground-water data----------------- 28
Color unit, definition of----------------------- 6
Concentration, mean, definition of-------------- 13
  suspended-sediment, definition of------------- 12
Contents, definition of------------------------- 6
Continuing-record station, definition of-------- 7
Control, definition of-------------------------- 7
Control structure, definition of---------------- 7
Cooperation------------------------------------- 2
Coyote Creek near Zap---------------------------367-375
Crown Butte Lake (Deep) near Mandan-------------667-670
Crown Butte Lake (Shallow) near Mandan----------671-672
Cubic feet per second per square mile (CFSM), definition of------------------------------ 7
Cubic foot per second (FT^3/S, ft^3/s), definition of------------------------------ 7

Page
Cut Bank Creek at North Lake outlet near
    Granville----218,750-752,767
Cut Bank Creek at Upham----219-220
Cypress Creek near Sarles----134,747-749,766

Data, accuracy of---- 24
  explanation of, surface water---- 19
Deep Creek near Amidon----291-299
Deep River below Cut Bank Creek near Upham----221-222
Deep River near Upham----215,767
Definition of terms---- 4
Des Lacs River at Foxholm----198-200
Devils Lake near Devils Lake---- 66
Diatoms, definition of---- 11
Dickey County, miscellaneous ground-water
    quality sites----783-790
Discharge, definition of---- 7
  instantaneous, definition of---- 7
  mean, definition of---- 7
  suspended-sediment, definition of---- 13
  total sediment, definition of---- 13
Dissolved, definition of---- 8
Diversity index, definition of---- 8
Divide County, ground-water levels in---- 774
Douglas Creek basin, partial-record water-
    quality analyses of lakes in----662-663
Downstream order and station number---- 16
Drainage area, definition of---- 8
Drainage basin, definition of---- 8
Dry mass, definition of---- 6
Duck Creek near Wibaux, MT---- 300
Dunn County, ground-water levels in---- 774

E. A. Patterson Lake near Dickinson----526,646-649
East Branch Short Creek Reservoir near
    Columbus---- 172
Eddy County, ground-water levels in---- 774
  miscellaneous ground-water quality sites----787-790
Edmore Coulee near Edmore---- 56-57
Egg Creek near Granville----216-217
Elm Creek near Golden Valley----364-365,753-755,768
Emmons County, ground-water levels in---- 775
Explanation of ground-water level records---- 28
Explanation of stage and water-discharge
    records---- 19
Explanation of water-quality records---- 25

Fecal coliform bacteria, definition of---- 5
Fecal streptococcal bacteria, definition of---- 5
Fish Creek Reservoir (Deep) near Judson----665-666
Fish Creek Reservoir
    (Shallow) near Judson---- 666
Forest River, at Minto----124-125
  near Fordville----123,744-746,764
Freshwater Coulee near Emerado----643,698

Gage height (G.H.), definition of---- 8
Gaging station, definition of---- 8
Golden Valley county, miscellaneous ground-water
    quality sites in----787-790
Goose River at Hillsboro----119,744-746,763
Grand Forks County, ground-water levels in---- 775
Grand River, North Fork at Haley---- 613
Grand River basin, gaging-station records in----613-621
  miscellaneous discharge measurements---- 645
  partial-record water-quality analyses of
      of lakes in----685-688
  partial-record surface-water quality sites----737-740
Grant County, ground-water levels in---- 775
Green algae, definition of---- 11
Green River, near New Hradec----527-536
  Tributary near New Hradec----537-538
  Tributary near South Heart---- 645
Griggs County, ground-water records in---- 776
Ground-water level data, by counties:
  Benson County---- 772
  Bowman County---- 773
  Burleigh County---- 773
  Cass County---- 773
  Divide County---- 774
  Dunn County---- 774
  Eddy County---- 774
  Emmons County---- 775
  Grand Forks County---- 775
  Grant County---- 775
  Griggs County---- 776
  Hettinger County---- 777
  Kidder County---- 777
  McLean County---- 777
  Oliver County---- 778
  Pembina County---- 778
  Pierce County---- 778
  Richland County---- 779
  Stark County---- 779
  Steele County---- 779

Page
Ground-water level data, by counties--Continued
  Stutsman County---- 780
  Traill County---- 780
  Walsh County----780-781
  Ward County---- 781
  Wells County---- 782
  Williams County---- 782
Ground-water chemical analyses by counties:
  Adams County----783-786
  Benson County----783-786
  Bottineau County----783-786
  Bowman County----797-798
  Burke County----783-786
  Dickey County----783-790
  Eddy County----787-790
  Golden Valley County----787-790
  Hettinger County----787-790
  Mercer County----791-794
  McHenry County----787-794
  Oliver County----791-794
  Slope County----791-794
  Stark County----791-794
  Wibaux County, MT----795-796
  Williams County----795-796
Ground-water level records---- 28

Hagel Creek near Center----489-493
Hardness, definition of---- 8
Hay Creek near Wibaux, MT----306-307
Hay Creek No. 2 near Wibaux, MT---- 305
Hazen Brook, at Emerado----642,697
  near Arvilla----642,696
  near Emerado----642,697
Heart River, near Lark----541,756-758,770
  near Mandan----543-553
  near Richardton----539,756-758,769
  near South Heart----516-525
Heart River basin, gaging-stations
    records in----349-353,504-553
  miscellaneous discharge measurements---- 645
  miscellaneous surface-water quality sites----756-758
  miscellaneous temperature measurements and
      field determinations----769-770
  partial-record water-quality analyses of
      lakes in----646-649,665-672
Hettinger County, ground-water levels in---- 777
  miscellaneous ground water quality sites----787-790
Hidden Island Coulee near Hansboro----133,747-749,766
Homme Lake near Park River---- 126
Hydrologic bench-mark station, definition of---- 19
Hydrologic conditions---- 3
  graph of---- 30
Hydrologic unit, definition of---- 8

Instantaneous discharge, definition of---- 7
Introduction---- 1

James River, at Jamestown----628,759-761,771
  at Lamoure----629-632
  at North Dakota-South Dakota State line----638-640
  near Grace City----624,759-761,771
  near Manfred----623,756-758,771
  near Pingree---- 625
James River basin, gaging-station records in----623-641
  miscellaneous discharge measurements---- 645
  miscellaneous surface-water quality sites----756-761
  miscellaneous temperature measurements and
      field determinations---- 771
  partial-record water-quality analyses of
      lakes in----650-651
Jamestown Reservoir near Jamestown----626,650-651

Kalina Reservoir (Deep) near Bowman----685-686
Kalina Reservoir (Shallow) near Bowman----687-688
Kelly Slough near Manvel----642,696
Kidder County, ground-water records in---- 777
Knife River, at Hazen----411-421
  at Manning----339-348
  at Marshall----354-363
  near Golden Valley----366,753-755,768
Knife River basin, gaging-station
    records in----339-348,354-443
  miscellaneous surface-water quality sites----753-755
  miscellaneous temperature measurements and
      field determinations---- 768
Kota Ra Reservoir (Deep) near Wheelock---- 658
Kota Ra Reservoir (Shallow) near Wheelock---- 659

Lake Alice near Churchs Ferry----652-653
Lake Ashtabula at Baldhill Dam---- 79
Lake Carmel (deep) near Mt Carmel----711-717
Lake Carmel (middle) near Mt Carmel----707-710
Lake Carmel (shallow) near Mt Carmel----705-706
Lake Darling near Foxholm---- 181
Lake Darling (Deep) near Carpio----655-656

Page
Lake Darling (Shallow) near Grano----------655-656
Lake Darling near Greene----------655-656
Lake Hoskins (Deep) near Ashley---------- 682
Lake Hoskins (Shallow) near Ashley---------- 683
Lake Iris (Deep) near Regent----------674-677
Lake Iris (Shallow) near Regent----------678-680
Lake Irvine near Churchs Ferry----------652-653
Lake Isabel (Deep) near Dawson---------- 673
Lake Isabel (Shallow) near Dawson----------673-674
Lake Metigoshe near Bottineau---------- 211
Lake Oahe near Pierre, SD---------- 622
Lake Renwick (Deep) near Akra----------726-732
Lake Renwick (Shallow) near Akra----------724-725
Lake Sakakawea at Riverdale----------691-692
Lake Sakakawea near New Town----------689-690
Lake Sakakawea near Riverdale---------- 328
Lake Tschida near Glen Ullin---------- 540
Lake Tschida (Deep) near Glen Ullin----------646-649
Lakes and Reservoirs:
  Alice, Lake, near Churchs Ferry----------652-653
  Ashtabula, Lake, at Baldhill Dam---------- 79
  Beaver Lake (Deep) near Burnstad---------- 681
  Beaver Lake (Shallow) near Burnstad----------681-682
  Bowman-Haley Lake, near Haley---------- 613
  Buffalo Lodge Lake (Deep) near Riga---------- 657
  Buffalo Lodge Lake (Shallow) near Riga----------657-658
  Camp Hump Reservoir (Deep) near Sentinel Butte---------- 661
  Camp Hump Reservoir (Shallow) near Sentinel Butte---------- 662
  Carmel, Lake (Deep), near Mt Carmel----------711-717
  Carmel, Lake (Middle), near Mt Carmel----------707-710
  Carmel, Lake (Shallow), near Mt Carmel----------705-706
  Crown Butte Lake (Deep) near Mandan----------667-670
  Crown Butte Lake (Shallow) near Mandan----------671-672
  Darling, Lake (Deep), near Carpio----------655-656
  Darling, Lake, near Foxholm---------- 181
  Darling, Lake (Shallow), near Grano----------655-656
  Darling, Lake, near Greene----------655-656
  Devils Lake, near Devils Lake---------- 66
  E. A. Patterson Lake near Dickinson----------526,646-649
  East Branch Short Creek Reservoir near Columbus---------- 172
  Fish Creek Reservoir (Deep) near Judson----------665-666
  Fish Creek Reservoir (Shallow) near Judson---------- 666
  Homme Lake near Park River---------- 126
  Hoskins, Lake (Deep) near Ashley---------- 682
  Hoskins, Lake (Shallow) near Ashley---------- 683
  Iris, Lake (Deep) near Regent----------674-677
  Iris, Lake (Shallow) near Regent----------678-680
  Irvine, Lake, near Churchs Ferry----------652-653
  Isabel, Lake (Deep), near Dawson---------- 673
  Isabel, Lake (Shallow), near Dawson----------673-674
  Jamestown Reservoir near Jamestown----------626,650-651
  Kalina Reservoir (Deep) near Bowman----------685-686
  Kalina Reservoir (Shallow) near Bowman----------687-688
  Kota Ra Reservoir (Deep) near Wheelock---------- 658
  Kota Ra Reservoir (Shallow) near Wheelock---------- 659
  Metigoshe, Lake, near Bottineau---------- 211
  Nelson Lake (Deep) near Center---------- 664
  Nelson Lake (Shallow) near Center---------- 665
  Oahe, Lake, near Pierre, SD---------- 622
  Renwick, Lake (Deep), near Akra----------726-732
  Renwick, Lake (Shallow), near Akra----------724-725
  Rice Lake (Deep) near Hull----------683-684
  Rice Lake (Shallow) near Hull---------- 684
  Rice Lake (Deep) near Ryder----------662-663
  Rice Lake (Shallow) near Ryder---------- 663
  Sakakawea, Lake, at Riverdale----------691-692
  Sakakawea, Lake, near New Town----------689-690
  Sakakawea, Lake, near Riverdale---------- 328
  Sweetbriar Reservoir near Judson---------- 542
  Sweetwater Lake at Sweetwater----------652-653
  Tschida, Lake, near Glen Ullin---------- 540
  Tschida, Lake (Deep) near Glen Ullin----------646-649
Little Beaver Creek, near Beach----------644-645
  near Wibaux, MT----------308-309
Little Beaver Creek tributary near Beach---------- 645
Little Coulee near Brinsmade---------- 62-64
Little Missouri River, at Marmarth----------290,753-755,768
  near Watford City----------320-327
Little Missouri River basin, gaging-station records in----------290-327
  miscellaneous discharge measurements----------644-645
  miscellaneous surface-water quality sites----------753-755
  miscellaneous temperature measurements and field determinations---------- 768
  partial-record water-quality analyses of lakes in----------661-662
Little Muddy River below Cow Creek near Williston----------266,750-752,767
Little Muddy River basin, gaging-station records in---------- 266
  miscellaneous surface-water quality sites----------750-752
  miscellaneous temperature measurements and field determinations---------- 767

Page
Little South Pembina River, above Lake Carmel----------703-704
  below Mt Carmel----------718-720
  near Walhalla----------138,747-749,766
Long Creek, at western crossing of international boundary, Saskatchewan---------- 165
  near Noonan----------166,750-752,766

Map showing location of, gaging stations---------- 31
  water-quality stations---------- 32
  ground-water observation wells---------- 33
Maple River (James River basin) at North Dakota-South Dakota State line---------- 641
Maple River (tributary to Sheyenne River), near Enderlin----------102-104
  near Hope----------101,741-743,763
Mauvais Coulee near Cando---------- 54-55
McHenry County, miscellaneous ground-water quality sites----------787-794
McLean County, ground-water levels in---------- 777
Mean concentration, definition of---------- 13
Mean discharge, definition of---------- 7
Mercer County, miscellaneous ground-water quality sites in----------791-794
Metamorphic stage, definition of---------- 9
Methylene blue active substance (MBAS), definition of---------- 9
Micrograms per gram (UG,G, µg/g), definition of---------- 9
Micrograms per liter (UG/L, µg/L), definition of---------- 9
Middle Branch Forest River near Whitman----------122,744-746,764
Middle Branch Park River, near Edinburg----------643,700
  near Nash----------643,744-746,765
  near Union----------128,744-746,764
Milligrams per liter (MG/L, mg/L), definition of---------- 9
Miscellaneous sites, discharge measurements at----------642-645
Missouri River, above Stanton---------- 338
  at Bismarck----------496-503
  at Garrison Dam----------329-337
  at Price---------- 471
  at Washburn---------- 469
  below Mandan---------- 554
  near Culbertson, MT----------233-238
  near Hensler---------- 457
  near Schmidt---------- 559
  near Stanton---------- 444
  near Williston----------260-264
Missouri River Stage Gage No. 4 near Nohly, MT---------- 239
Missouri River Stage Gage No. 5 at Nohly, MT---------- 240
Missouri River Stage Gage No. 5A at Buford---------- 256
Missouri River Stage Gage No. 6 near Buford---------- 257
Missouri River Stage Gage No. 7 near Trenton---------- 258
Missouri River Stage Gage No. 8 near Trenton---------- 259
Missouri River Stage Gage No. 9 at Williston---------- 265
Missouri River Stage Gage No. 11 near Williston---------- 271
Missouri River Tributary No. 2 near Hensler----------452-456
Mouse River. See Souris River.
Mowbray Creek near Mowbray, Manitoba---------- 136

National Geodetic Vertical Datum of 1929 (NGVD), definition of---------- 9
National stream-quality accounting network (NASQAN), definition of---------- 19
Natural substrate, definition of---------- 13
Nelson Lake (Deep) near Center---------- 664
Nelson Lake (Shallow) near Center---------- 665
Nelson Creek basin, partial-record water-quality analyses of lakes in----------658-659
North Branch Park River, above Hoople----------747-749,765
  at Gardar----------744-746,765
  at Hoople----------643,747-749,765
  near Crystal----------643,700-701
  near Gardar---------- 643
  near Hoople---------- 643
  near Nash----------643,702
North Branch Turtle River near Larimore----------642,693
North Creek, near Belfield---------- 645
  near South Heart----------512-515
North Fork Grand River, above Bowman-Haley near Haley---------- 737
  at Haley----------614,738-739
  near Haley---------- 645
Norwegian Creek near Belfield----------504-507
Numbering system for wells and miscellaneous sites---------- 17

Oak Creek, at Lake Metigoshe Outlet near Bottineau---------- 212
Oliver County, ground-water levels in---------- 778
  miscellaneous ground-water quality sites----------791-794
Order, downstream, and station number---------- 16
Organic mass, definition of---------- 6

Page
Organism, definition of---------------------------- 9
  cells/volume, definition of----------------------- 9
  organism count/area, definition of--------------- 9
  organism count/volume, definition of------------- 10
  total organism count, definition of-------------- 10
Organism count/area, definition of------------------ 9
Organism count/volume, definition of---------------- 10
Other data available-------------------------------- 25

Painted Woods Creek near Wilton---------470,753-755,769
Painted Woods Creek basin, gaging-station
      records in------------------------------------ 470
  miscellaneous surface-water quality sites in--753-755
  miscellaneous temperature measurements and
      field determinations-------------------------- 769
Parameter codes------------------------------------- 27
Park River, at Grafton-----------------130,747-749,765
  Middle Branch, near Edinburg---------------------643,700
  Middle Branch, near Nash-------------------744-746,765
  Middle Branch, near Union--------------128,744-746,764
  North Branch, at Gardar--------------------744-746,765
  North Branch, at Hoople----------------643,747-749,765
  North Branch, near Crystal-----------------643,700-701
  North Branch, near Nash--------------------------643,702
  South Branch, below Homme Dam--------------------744-746
Park River basin, partial-record water quality
      sites---700-702
Partial-record station, definition of--------------- 10
Partial-record water-quality analyses of
      lake stations-----------------------------------646-692
Particle size, definition of------------------------ 10
  classification, definition of--------------------- 10
Pembina County drain 20 near Glasston---132,747-749,765
Pembina County, ground-water levels in-------------- 778
Pembina River, at Neche----------------154,750-752,766
  at Walhalla-------------------------------------139-153
  near Windygates, Manitoba------------------------- 137
Pembina River basin, partial-record water
      quality sites in-------------------------------703-732
Percent composition, definition of------------------ 10
Percent saturation, definition of------------------- 10
Periphyton, definition of--------------------------- 10
Pesticide program, definition of-------------------- 19
Pesticides, definition of--------------------------- 11
pH, definition of----------------------------------- 11
Phytoplankton, definition of------------------------ 11
Picocurie (PC, pCi), definition of------------------ 11
Pierce County, ground-water levels in--------------- 778
Pilot Drain at Oakes-----------------------------634-637
Pipestem Creek, near Jamestown---------------------- 645
  near Pingree-----------------------627,759-761,771
Plankton, definition of----------------------------- 11
  Blue-green algae, definition of------------------- 11
  Diatoms, definition of---------------------------- 11
  Green algae, definition of------------------------ 11
  Phytoplankton, definition of---------------------- 11
  Zooplankton, definition of------------------------ 11
Polychlorinated biphenyls (PCBs),
      definition of--------------------------------- 12
Primary productivity, definition of----------------- 12

Radiochemical program, definition of---------------- 19
Records of discharge by other agencies-------------- 25
Recoverable from bottom material, definition of- 12
Red River of the North, at Drayton------131,747-749,765
  at Emerson, Manitoba----------------------------156-164
  at Fargo----------------------------46,741-743,762
  at Grand Forks-----------------------120,744-746,764
  at Halstad, MN----------------------------------106-114
  at Hickson--------------------------------------- 36-40
  at Wahpeton-------------------------35,741-743,762
  below Fargo-------------------------------------- 47-49
Red River of the North basin, gaging-station
      records for--------------------------------- 34-232
  miscellaneous discharge measurements-----------642-644
  miscellaneous surface-water quality sites-----741-752
  miscellaneous temperature measurements and
      field determinations-----------------------762-767
  partial-record water-quality analyses of
      lakes in-----------------------------------652-658
  partial-record surface-water quality sites in-733-736
Reservoirs, See lakes and reservoirs:
Rice Lake (Deep) near Hull-----------------------683-684
Rice Lake (Shallow) near Hull----------------------- 684
Rice Lake (Deep) near Ryder----------------------662-663
Rice Lake (Shallow) near Ryder---------------------- 663
Richland County, ground-water levels in------------- 779
Runoff in inches (IN, in), definition of------------ 12
Rush River at Amenia-------------------105,744-746,763

Saltwater Coulee, near Emerado-------------------642,698
  near Manvel--------------------------------------- 643
SAR (Sodium-adsorption ratio), definition of---- 13

Page
Sediment-- 27
  bedload, definition of---------------------------- 12
  definition of------------------------------------- 12
  mean concentration, definition of----------------- 13
  suspended sediment, definition of----------------- 12
  suspended-sediment concentration,
      definition of--------------------------------- 12
  suspended-sediment discharge, definition of--- 13
  suspended-sediment load, definition of------------ 13
  total sediment discharge, definition of----------- 13
Shell Creek near Parshall---------------289,753-755,768
Shell Creek basin, gaging-station records for--- 289
  miscellaneous surface-water quality sites-----753-755
  miscellaneous temperature measurements and
      field determinations-------------------------- 768
Sheyenne River, above Harvey------------------------ 50-52
  at Lisbon--- 86-89
  at Valley City-----------------------85,741-743,763
  at West Fargo-----------------------100,741-743,763
  below Baldhill Dam-------------------------------- 80-84
  near Cooperstown---------------------------------- 67-73
  near Horace-------------------------99,741-743,763
  near Kindred-------------------------------------- 90-98
  near Warwick------------------------53,741-743,762
Short Creek below international boundary
      near Roche Percee, Saskatchewan--------------- 173
Slope County, miscellaneous ground-water
      quality sites----------------------------------791-794
Snowflake Creek near Snowflake, Manitoba------------ 135
Sodium-adsorption ratio (SAR), definition of---- 13
Solute, definition of------------------------------- 13
Souris (Mouse) River, above Minot-------201,750-752,767
  near Bantry-------------------------210,750-752,767
  near Foxholm------------------------------------182-197
  near Sherwood-----------------------------------174-180
  near Verendrye----------------------------------202-206
  near Westhope-----------------------------------224-232
South Branch Heart River near South Heart-------508-511
South Branch Park River below
      Homme Dam---------------------------127,744-746,764
South Branch Turtle River
      near Larimore----------------------------------642,693
Special networks and programs----------------------- 19
Specific conductance, definition of----------------- 13
Spring Creek, (Knife River basin) at Zap---------405-409
  below Lake Ilo at Dunn Center-------------------385-394
  near Haley--645,737
  near Halliday-----------------------------------395-404
Spring Creek basin, partial-record water quality
      analyses of lakes in---------------------------682-684
Square Butte Creek, above Nelson Lake
      near Center------------------------------------477-488
  below Center------------------------494,753-755,769
  near Hannover-----------------------------------472-476
Square Butte Creek basin, gaging-station
      records in-------------------------------------472-494
  miscellaneous surface-water
      quality sites in-------------------------------753-755
  miscellaneous temperature measurements and
      field determinations-------------------------- 769
  partial-record water-quality analyses of
      lakes in---------------------------------------664-665
Stage, definition of-------------------------------- 13
Stage-discharge relation, definition of------------- 13
Stark County, ground-water levels in---------------- 779
  miscellaneous ground-water quality sites-------791-796
Starkweather Coulee near Webster-------------------- 60-61
Station numbers, definition of---------------------- 16
Steele County, ground-water levels in--------------- 779
Stony Creek near Williston-----------------------267-270
Stony Creek basin,
      gaging station records for---------------------267-270
Stray Creek near Manning-------------------------349-353
Streamflow, definition of--------------------------- 13
Stutsman County, ground-water levels in------------- 780
Substrate, definition of---------------------------- 13
  artificial, definition of------------------------- 14
  natural, definition of---------------------------- 13
Surface area, definition of------------------------- 14
Surficial bed material, definition of--------------- 14
Suspended, recoverable, definition of--------------- 14
Suspended sediment, definition of------------------- 12
Suspended-sediment concentration,
      definition of--------------------------------- 12
Suspended-sediment discharge, definition of----- 13
Suspended-sediment load, definition of-------------- 13
Suspended, total, definition of--------------------- 14
Sweetbriar Reservoir near Judson-------------------- 542
Sweetwater Lake at Sweetwater--------------------652-653

Taxonomy, definition of----------------------------- 15
Temperature, water---------------------------------- 26
Terms, definition of-------------------------------- 4

Thermograph, definition of---------------------- Page
Timber Creek near Bentley------------------------ 15
Time-weighted average, definition of-----------590-599
Tobacco Garden Creek near Watford City--272,750-752,768
Tobacco Garden Creek basin, gaging station
records in------------------------------------
  miscellaneous surface-water quality sites in--750-752 272
  miscellaneous temperature measurements and
field determinations------------------------
Tongue River, at Akra----------------------155,733-736 768
  above Lake Renwick near Akra------------------721-723
Tons per acre-foot, definition of-------------- 15
Tons per day, definition of-------------------- 15
Total, definition of--------------------------- 15
Total coliform bacteria, definition of---------- 4
Total in bottom material, definition of--------- 16
Total organism count, definition of------------ 10
Total, recoverable, definition of-------------- 16
Total sediment discharge, definition of--------- 13
Traill County, ground-water levels in---------- 780
Turtle River, above Kelly Slough near Manvel---- 695
  above State Park near Arvilla---------------- 694
  at Manvel---------------------------------121,699
  below Air Base near Mekinock----------------- 695
  below State Park near Arvilla---------------- 695
  near Arvilla-------------------------------- 642
  near Larimore------------------------------642,694
  near Manvel--------------------------------642-643
  near Mekinock------------------------------642,695
Turtle Creek basin, partial-record surface-
water quality sites----------------------693-699

Walsh County, ground-water levels in-----------780-781
Ward County, ground-water levels in------------ 781
Water analysis--------------------------------- 25
Water-supply papers, definition of------------- 16
Water year, definition of---------------------- 16
Water temperature------------------------------ 26
Webster Coulee at Webster-------------------- 58-59
Weighted average, definition of---------------- 16
Well-numbering system-------------------------- 17
Wells County, ground-water levels in----------- 782
West Branch Antelope Creek near Hazen----------435-438
West Branch Antelope Creek No. 2 near Beulah----433-434

West Branch Antelope Creek No. 4 near Zap-------Page 429-432
West Branch Antelope Creek No. 5 near Zap-------427-428
West Branch Otter Creek near Beulah------------410,769
West Branch Short Creek near Columbus-----------167-171
Wet mass, definition of------------------------ 6
White Butte Fork Cedar Creek near
Scranton-------------------------588,756-758,770
White Earth Reservoir (deep) near White Earth---659-660
White Earth Reservoir (shallow) near
White Earth-------------------------------- 660
White Earth River at White Earth---------------281-283
White Earth River basin, gaging-station
records for---------------------------------281-283
  partial record water-quality lakes-----------659-660
Wibaux County, miscellaneous ground-water
quality sites in----------------------------795-796
Wild Rice River, near Abercrombie-------------- 42-45
  near Rutland------------------------41,741-743,762
Williams County, ground-water levels in-------- 782
  miscellaneous ground-water quality sites------795-796
Willow Creek, at Dunseith---------------------- 643
  near Dunseith-------------------------------- 643
  near Overly---------------------------------- 644
  near Willow City-----------------------------213-214
Wintering River, near Karlsruhe----------------207-209
Wolf Creek, near Fonda------------------------- 644
  near junction of ND Highway No. 5
and FAS 164-------------------------------- 644
  near Rolette--------------------------------- 644
  near Thorne---------------------------------- 644
WRD, definition of----------------------------- 16
WSP, definition of----------------------------- 16

Yellowstone River near Sidney, MT--------------241-250
Yellowstone River Stage Gage No. 1 near
Pairview, MT-------------------------------- 251
Yellowstone River Stage Gage No. 2 near
Cartwright---------------------------------- 254
Yellowstone River Stage Gage No. 3 near
Buford-------------------------------------- 255
Yellowstone River basin, gaging-station
records for--------------------------------241-255

Zooplankton, definition of--------------------- 11

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Muitiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons